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THE Marmora Gold District, in Ontario, is looking up. The Gatling Company is going to work again, and several other enterprises are pounding out pay in a small way. The ores are very abundant and rich, but rebellious.

WE are indebted to the courtesy of ROBERT HUNT, Esq., Keeper of the Mining Records, for his annual volume on the "Mineral Statistics of Great Britain and Ireland." This book contains an immense amount of valuable statistical information concerning the production, importation, and distribution of the various minerals during the year 1878. We shall have occasion to make extracts from its pages at another time.

THE Dahlonega District, Ga., is said to be producing at the rate of about $300,000 a year in gold, mostly from ores running from $1 to $2 per ton. It is said that with good water-power the slate belt which contains gold throughout, can be hydraulicked, and the quartz—which occurs in small stringers, and is at times rich in gold—can then be passed under the stamps. Experts who have recently examined the district assert that in this way these gold deposits, which are more nearly placer than milling "propositions," will pay a fair interest, though containing only $1 to $1.50 per ton. Necessarily, the quantity treated would have to be enormous to make an enterprise worthy of notice on the stock boards.

THE Bodie *Standard* seems surprised that we should so soon have arrived at the end of our list of Bodie Bubbles; and its surprise is quite natural, for it knows perfectly well that the list is by no means exhausted. Our contemporary must excuse us on the plea of want of space, not lack of material; but we shall be extremely gratified to give the *Standard* credit for exposing some of the *wild-cats* in its vicinity if it will afford us a single opportunity to do so.

Because Bodie possesses some mines of real, though it may be overvalued, merit, such as the Standard, the Bulwer, the Bodie, the Noonday, and a few others which have been so abundantly advertised that there is no need of going over the ground again, the local papers would have the public believe that every hole in the ground in the vicinity of Bodie is a valuable mine, or at least a prospect worth the price of a valuable mine. By their universal, indiscriminate puffing they are injuring the good mines, and destroying their own influence. No one now believes them when they praise good property; for they apply equal praise to the rankest bubbles.

THE BULLION PRODUCTION OF LEADVILLE, COLO.

We are indebted to Mr. WILLIAM COPELAND for the following interesting statistics, which he personally collected and vouches for, as full and correct. In October, 1878, the first furnace at Leadville was blown in. Since that time, up to August 1st, 1879, the several smelting establishments have smelted 48,659 tons of ore, from which have been produced 9958 tons of bullion, containing 3,401,283 ounces of silver. The value of this silver is stated at $3,725,000; that of the lead at $197,420; and there were also produced 211 ounces of gold, worth, say, $4000. A large quantity of ore was shipped from Leadville to Denver, Omaha, St. Louis, and other reduction works, both before and since the erection of smelters at Leadville. The value of this ore, shipped up to August 1st, was about $5,500 000; making a total value of Leadville's production up to August 1st, 1879, $9,426,420. Since August 1st, the ore smelted has amounted to about 600 tons a day, yielding an average of perhaps $80 per ton; and there have been shipped per day 10 tons, averaging $150 per ton—more than one million and a quarter dollars a month. See, further, the article "Leadville (Colo.) Statistics."

"IT IS DEPLORABLE."

The true inwardness of the indiscriminate bubble-blowing of the Bodie newspapers is explained by the *Standard*, which says:

"We know the position occupied by the mining press of San Francisco, and it is deplorable. If they say too much about the Bodie mines, they are threatened by the Comstock ring with the withdrawal of their patronage. We have not the heart to blame them, because printers and publishers must live. But we express the utmost detestation for the knaves who will take advantage of a publisher, and force him to either say something in favor of his particular camp, or else keep still and say nothing of a rival company; and this course we know has been resorted to in regard to Bodie."

For ourselves, we wholly disagree with our contemporary as to its system of conducting a public journal. If a paper is to possess any influence, or to be worthy of credence or confidence, it must be conducted with such independent honesty that "knaves" can not "force its publisher to say something in favor of his particular camp" which is not true and which the publisher knows to be false. When a newspaper ceases to be honest, it becomes a curse to the public at large, and a demoralizer of the community in which it circulates. No doubt many of the San Francisco papers have contributed largely to that demoralization which has to so great an extent converted that city into a community of gamblers, and which has made the papers themselves the appropriate exponents of such a condition of society. When a newspaper lends itself to the circulation of deliberate misstatements, in what respect is it better than the "knaves" who "force it," by the offer of "patronage" or money, to do their bidding?

THE END OF CHEAP COAL.

Though the late attempt to re-establish that mischievous invention, the "coal combination," was a miserable fiasco, as it deserved to be, the "boom" has come in the coal trade, and prices are advancing, and will continue to advance, until highly remunerative figures will be obtained. This revival in the coal trade has come, as we have many times pointed out in the ENGINEERING AND MINING JOURNAL it could alone come, by the consumptive demand overtaking the ability to produce. Every effort to bring about prosperity in the industry by arbitrarily increasing prices, or by working short time and restricting the amount of coal a miner was allowed to cut, and by other violations of the fundamental laws of trade and political economy, proved dismal failures, and in every instance reacted on the industry itself and retarded the revival of prosperity. The failure of each successive attempt at combination intensified and embittered the rivalry between the great companies, and brought about such a depression in prices as all but bankrupted the several companies engaged in this trade.

At the present time, the wonderful revival in every branch of industry has created the long-looked-for demand, and the market is taking all the mines are producing, and all they can produce, without forcing the output. Prices have already commenced to advance, and, in the present "booming" condition of the whole country, they may be expected to continue to advance.

In bituminous coal, it is to be noted that the Clearfield miners will undoubtedly secure an advance of wages. Some of the Cumberland miners have already conceded the demands of the men, and, with the rise in anthracite, the wages in that industry will also increase, for the market will not stand a long stoppage; hence, we may safely affirm that the time of cheap coal—that is, of coal selling at two dollars a ton in New York harbor—has passed, and can not possibly return for many years. We may also affirm that there will be no more coal combinations until, in the now distant future, the companies shall unite to resist strikes among the men, when we shall probably be treated to a repetition of the old follies.

PETROLEUM AS FUEL.

At Titusville, Pa., the experiment of using petroleum as fuel for heating iron is being made by Dr. C. J. EAMES, the inventor of the process for burning petroleum which has already several times been described in the

Engineering and Mining Journal. The experiment at the Eames Iron-Works, Titusville, seems to be quite successful technically. The following description of the plant, which we take from the Oil City *Derrick*, will be of interest, not only to our iron men, but to others who may be disposed to substitute petroleum for coal in their works. The evident advantages of petroleum fuel are, the perfect control under which the heat is held; the extremely high calorific intensity of this "water-gas;" and the freedom of the fuel from any elements injurious to the iron. It is claimed that the work can be performed much quicker, and the quality of the product can be made more uniform and of higher grade, than can be secured with coal fuel. We have no data on the important decisive question of relative cost.

"The generator wherein the petroleum is vaporized consists of a cast-iron vessel with horizontal shelves projecting alternately from opposite sides, over which shelves the oil, entering overhead by a quarter-inch pipe, trickles down. This generator is contained in a brick setting about six feet square and five feet high. Around and below this is a large iron box called a superheater, the four sides of which are full of flues. Below that again is the furnace, containing another superheater surrounding the fire.

"A six-inch oil-pipe seventy-five feet high stands a short distance away. This is sealed at the top, and is pumped full of oil by means of a smaller pipe running up its side. There is also an overflow pipe attached, by means of which the large pipe is relieved when full, the oil returning to a tank built in the ground for that purpose. At the bottom of the great pipe is a small one that leads to the top of the generator, while another pipe runs from the boilers to the bottom of the same vessel and supplies the steam. The seventy-five-foot column of oil yields a uniform pressure of a trifle over twenty-four pounds, but a steady twenty pounds is all that the gauge is required to indicate for the generator. The column is used in preference to a pump on account of the evenness of its pressure, which never varies in the slightest degree. From this column the generator is fed through a small aperture, the oil trickling down by drops on to the different series of shelves mentioned above.

"The steam, after leaving the boilers, is passed through the coil of pipes in the superheater until it is heated to incandescence and finds vent in the bottom of the generator, and there meets the oil as it drips from the bottom shelf. Every trace of oil is taken up and swept on to the combustion-chamber, where it is ignited, and also forced into the furnaces by the air-blasts which it encounters at this point. The combustion-chamber consists simply of a cellular tier of fire-bricks placed on ends, extending across the bridge-wall. Within these cells combustion begins; and it is found that, if this combustion-space has a horizontal thickness of more than eighteen inches, the fire-brick fuse down. The heat escaping from the two furnaces passes through the flues of the two sixty-horse boilers, which supply the power for all the heavy machinery in the works. A twelve-horse auxiliary boiler furnishes the steam for the generator.

"When the vapor passes into the heating or puddling furnace, as the case may be, it is lighted with a piece of waste. It ignites with a slight explosive sound.

"Thus far, the work has been confined to manufacturing old junk into blooms. Men sort the wrought from the scrap iron, the latter having to go through the ordeal twice.

"The works now shut down at 6 in the evening. At 6.15 the next morning, the fire is let into the furnace, and at 7 o'clock puddling can be commenced. Two heats are made in one hour, and in three hours a ton of iron is manufactured. The puddling-furnace is first lined with Lake Superior Republic ore No. 1, about a thousand pounds in quantity, and charged with 475 pounds of pig-iron. At the expiration of forty-five minutes, the molten iron is puddled and conveyed to one of the ponderous steam-hammers, where it is pounded into two blooms, each six inches square by twenty inches long. Then these blooms are placed in the heating furnace, where they remain for ten minutes under the spell of another intense heat. After this re-heating, they are taken to the other hammer and made into finished blooms, which weigh between 175 and 200 pounds apiece, their market value ranging from $71 to $80 per ton. The daily capacity of both furnaces is thirty tons of iron, for which thirty barrels of crude oil are used. To do the same work would require at least forty tons of coal."

NEW PUBLICATIONS.

The Theory of Color in its Relation to Art and Art Industry. By Dr. Wilhelm Von Bezold, *Professor of Physics at the Royal Polytechnic School of Munich, and Member of the Royal Bavarian Academy of Sciences. Translated from the German by* S. R. Koehler. *With an Introduction and Notes by* Edward C. Pickering, *Thayer Professor of Physics at the Massachusetts Institute of Technology. Authorized American Edition. Revised and enlarged by the Author. Illustrated by Chromo-Lithographic Plates and Wood-Cuts.* Boston: L. Prang & Company. 1876. 8vo, pages 274.

This work deals very effectively, both in the text and by its illustrations, with the properties and relations of color, and will prove of important service to those employed in the decorative department of pottery.

The effects of juxtaposition of given colors are stated, and these with reference to their position in the chromatic scale. The theoretical portion of the work throws light upon the practice of the colorist's art. The distinctions in selection of colors on materials through which light is transmitted, or which, in other words, are translucent, and those which are opaque, are duly treated of, and variations in hues according to the degree to which white light enters into the spectrum philosophically accounted for. Two leading classifications exist in colors—one in the results of those colors belonging to the same group in scales, tones, and hues; the other, in the assortment of colors of different groups with reference to their effect on each other and the general design. The modifications which colors undergo from mixing or being placed in the vicinity of each other are formulated in this work with great completeness. To enter on a synopsis of the principles and facts presented is out of the question, and we content ourselves with heartily commending it to pottery and glass manufacturers.

Annual Record of Science and Industry for 1878. *Edited by* Spencer F. Baird, *with the Assistance of Eminent Men of Science.* New York: Harper & Brothers. 1879. 12mo, pages 715. Index. Price, $2.

The general design of the *Record*, and the excellence of its execution, are well known to all who, from year to year, have welcomed the successive volumes; but for the benefit of those who may not know the work, we give its plan. At first, the volume consisted of two parts, namely, a general summary of progress in the various branches of science; and, secondly, a series of abstracts of special papers, credited to the work in which they were published. These abstracts, although anonymous, were prepared by several specialists. In 1877, the plan was modified by enlarging the scope of the first division, and making it include a greater amount of detail, each summary being prepared by some eminent specialist, and headed by his name. Besides the valuable space thus gained, this modified plan has the merit of causing each fact in a particular department to pass through the mind of the specialist in charge, and to come forth correctly and concisely stated and authenticated. The bare statement of a given fact in science by one familiar with the whole subject, and master of the changing nomenclature demanded by the new discoveries or modifications continually arising, is, in itself, apart from the precious time saved to the general reader and the student, an educational process of great value.

The various departments and their editors are as follows: Astronomy, by Edward S. Holden, U. S. Naval Observatory, Washington; 90 pages, including a Bibliography of the subject. Physics of the Globe, by Cleveland Abbe, with the assistance of Prof. C. G. Rockwood, of Princeton, N. J.; 120 pages. Physics, by George F. Barker, Professor of Physics in the University of Pennsylvania, Philadelphia; 36 pages. Chemistry, by George F. Barker, Professor of Physics, etc.; 14 pages. Mineralogy, by Edward S. Dana, Ph.D., Yale College, New Haven, Conn.; 16 pages. Geology, by T. Sterry Hunt, LL.D., F.R.S., Professor of Geology, Institute of Technology, Boston, Mass.; 26 pages. Hydrography, by Francis M. Green, Lieutenant-Commander, U.S.N.; 14 pages. Geography, by Francis M. Green, Lieutenant-Commander, U.S.N.; 28 pages. Microscopy, by Prof. Hamilton L. Smith, Hobart College, Geneva, N. Y.; 28 pages. Anthropology, by Prof. Otis T. Mason, Columbian University, Washington, D. C.; 28 pages. Zoölogy, by Dr. A. S. Packard, Professor of Zoölogy and Geology, Brown University, Providence, R. I.; 46 pages. Vertebrate Zoölogy, by Prof. Theodore Gill, of Washington, D. C.; 46 pages. Botany, by Prof. W. G. Farlow, Harvard College, Cambridge, Mass.; 24 pages. Agriculture and Rural Economy, by Prof. W. O. Atwater, Wesleyan University, Middletown, Conn.; 44 pages. Engineering, William H. Wahl, Ph.D., Philadelphia, Pa.; 14 pages. Technology, by William H. Wahl, Ph.D.; 18 pages. Industrial Statistics, by William H. Wahl, Ph.D.; 17 pages. Necrology, 7 pages. Bibliography (Classified); 63 pages. Index, 25 pages.

The price of this admirable volume is only $2. The series of eight volumes, from 1871–78, inclusive, is $15; single volumes, $2. Address The Scientific Publishing Company, 27 Park Place, P.O. Box 4404, New York City.

PROBABLE ERRORS IN HUMBER'S BOOK ON STRAINS.

Editor Engineering and Mining Journal:

Sir: In that excellent and much-used little volume, Humber's "Handy-Book on Strains," is there not an error on page 7, which might lead to trouble? In the case of a beam supported at both ends, and bearing on a portion only of its length a uniform load which begins at one end of the beam, it is stated that "the greatest moment produced by a given length of load will be at its extremity, provided the load does not extend beyond the center of the span; for, should it depass that point, the greatest strain will remain constant in position at the mid-span." Both these statements, it appears to me, are incorrect; for, with the load reaching to the center, the greatest moment is at *one fourth* of the length of the load from its extremity, instead of *at* it. Consequently, if the load extends but *a little* beyond the center, the maximum moment will be *nearly* one fourth of its length from that point, instead of at it. It will gradually approach the center as the load lengthens, but will not, I think, coincide with it until the load covers the entire beam. By the extremity is meant the end farthest from the support at which the load commences.

Also, on page 18, Art. 45, is it not entirely incorrect to state that the greatest shearing force in such a case is at the junction of the loaded and unloaded sections? Will some one of your many able readers be kind enough to answer these questions? X.

COMPARATIVE EFFICIENCY OF DIFFERENT EXPLOSIVES.

Editor Engineering and Mining Journal:

Sir: I read with astonishment, in your esteemed journal of October 11th, an extract from the *Scientific American*, containing a list of some explosive materials and their energy. Your reflections on the statements made were perfectly correct. Dynamite never has been and never will be of the same strength as nitro-glycerine. It is easily understood that 20 to 30 per cent "Kiselguhr," mixed with nitro-glycerine, can not add any power to the compound, and that the energy of the dynamite depends directly on the quantity of nitro-glycerine it contains.

Dynamite is used only because the nitro-glycerine in this form has lost many of its worst disadvantages; but if explosive materials, or materials readily decomposed by the heat of the explosion, are used for absorbing nitro-glycerine, this will add something to the effect of the compound over what the nitro-glycerine in itself would give. None of the explosives invented of late has had a greater effect and power than the pure nitro-glycerine.

The old and common form for dualine is as follows: Nitro-glycerine, 50 per cent; fine sawdust, 30 per cent; nitrate of potassium, 20 per cent. This gives, with only 50 per cent nitro-glycerine, a compound of nearly

the same effect as dynamite; but, as it has some great disadvantages, it is not very much used.

The effect of an explosive material is not so very easily found, in consequence of the fact that some explosives which give good results in hard stone do not have half the effect in softer materials, and *vice versa;* but the following will show, as nearly as possible, the comparative effect of some explosives: Nitro-glycerine, 100; dynamite, 70–80; dualine, 65–75; blasting-powder, 30–40. HENRY SELLMAN, Chemist.

NEW YORK, Oct. 13.

THE MINES NEAR WASHINGTON, GA.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: I wrote you, in the summer, something about our mining prospects, and I now desire to add some report as to our progress. It seems strange that the JOURNAL never has a word to say in reference to mines in this section; but I suppose this is owing to the fact that none of our mines are listed on your Mining Exchange. In the State of Georgia, we have more than 500 stamps at work; yet, as a mining region, we get scarcely any notice from Northern papers. Within a radius of 20 miles from Washington, we have seven or eight mines that are steadily worked; five stamp-mills in active operation, and the sixth nearly completed. Two of these mines are worked by Philadelphia capital; the rest are home enterprises. I can only give you their names, with a short sketch of their present condition, so far as I know it.

The Guarantee Mining Company, of Philadelphia, Charles H. Morehead, President, is operating about fifteen miles from Washington. It is now erecting, and has nearly completed, a ten-stamp mill of heavy stamps, and has in place a splendid sixty-five H.P. engine, and will soon add largely to the stamping capacity. Messrs. Malin, Campbell & Co., of Philadelphia, were instrumental in organizing this company, and these gentlemen are receiving the hearty thanks of our people for assisting in opening up to public notice an undeveloped region. They had to contend with all the prejudices of Northern people against Southern mines, but overcame these at last, and have driven an entering-wedge that we hope will do us much good in the end.

Messrs. Tatham & Jennings are working two or three mines about eighteen miles distant from this point, with flattering prospects at each one of their mines. They also are from Philadelphia, and have ample means to push their business successfully. They are working at present with a five-stamp mill and fifteen H.P. engine, but will soon make large additions to their stamping power. They began work a few weeks ago, in an old shaft, forty or fifty feet deep, that had been abandoned before the war, on account of water, and have within the last ten days struck the vein and found ore that is immensely rich. Mr. Thomas Levy sunk this shaft before the late war, and found that the ore yielded forty dollars per bushel.

The Stony Ridge mines are a recent discovery, six miles southwest of this place, in an entirely new region. The owners are all Southern men, and are at present testing the value of their mines with a light stamp-mill. Their ore is good, and promises to be very abundant.

The Kendall mine is eleven miles from Washington, and is owned by Messrs. Kendall & Smith. They have built a five-stamp mill, 450-pound stamps, made by Fraser & Chalmers. Their power is supplied by a twenty H.P. engine. Their mill is located upon a stream that would supply water enough for thirty or forty stamps in the driest seasons. The mill is run in the day-time only, at an expense of less than five dollars per day, and is paying good dividends. Their main shaft is down to water, at a depth of eighty-two feet, and they are now running drifts on each side of the shaft. At water-level, the ore assays $49.40 per ton; but having no facilities for taking out the water, all the workings are above, where the ore is not so good, although yielding a good profit. The great need of this mine is deeper working and more stamps; but these gentlemen have their hands full of other enterprises, and would probably sell a controlling interest to parties who would set to work on a proper scale.

The Sale mine, leased by Dr. Lane, Chenault, and others, keeps up its good reputation for paying big dividends. They have an eight-stamp mill, and an arrastra, run night and day at an expense of $15, with a product ranging from forty to three hundred dollars a day. Their shaft is forty or fifty feet below water.

The Magruder mine, twelve miles from Washington, is owned by Carlyon, Smith & Jackson. They have a nine-foot vein, thirty feet below water, and have just finished building a ten-stamp mill, which is run by a fifteen H.P. engine. They started their mill about a week ago, and the mine steps to the front now and makes its bow to the public, with a large product. These gentlemen deserve a great deal of credit for their dogged perseverance in the face of great difficulties. They had been embarrassed for want of means to purchase machinery, and had sought for assistance in your city, without avail. Two members of your Mining Exchange, with an expert, examined their mine in the spring; but the expert did not report favorably, and, as no trade was made, the owners ceased to look abroad for assistance, and were soon successful in equipping their mine with good machinery by their own efforts.

I have mentioned in this article only those mines which are equipped with machinery. There are promising places, which are undeveloped for want of capital. There are two things which I wish your readers to bear in mind, in reference to this section. The first is, that the only two mines mentioned here that have been sunk below water-level are paying large dividends; and the second is, that none of the mines is troubled with sulphurets. The Magruder is worked at a depth of 130 feet, and the ore yields free gold. The Sale is down about 100 feet, and gives free gold only. The Kendall is 82 feet, and no sign of sulphurets. These three mines are in the same neighborhood, forming a triangle, the sides of which are about three miles long.

The showing made by our mines is certainly a good one. Out of the five mines that have machinery at work, four are paying good profits, and the fifth is paying expenses with a five-stamp mill, the stamps weighing only 100 pounds each. Labor is abundant here at from $10 to $12 per month, and wood at from 50 to 60 cents per cord.

While our people have land and work stock, they have no surplus capital, and are unable to develop their mineral wealth. There are fine opportunities for investments, and we invite strangers to come and see what we have. We can promise them good mines, a delightful climate, and a hearty welcome. C. E. SMITH.

WASHINGTON, GA., Oct. 11.

THE PENOBSCOT MINE, MONTANA.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: In the JOURNAL of September 20th is a letter, entitled "Montana Mining Notes," from a correspondent of yours; and among other items are some remarks on the Penobscot mine, collected from conversations, and suggesting a few questions, which your correspondent adds. As, in a previous issue, something to the same effect appeared from another Montana correspondent, a little information, not derived from conversations, but from inspection of the property, may not come amiss.

There are three reasons given for the "bullion not being forthcoming." The first and second are pretty good reasons—either the value is not in the ore, or it is not taken out; but the third I am loth to accept as even possible; because, if the number of high-salaried officials affect the bullion product, it implies that the bullion passes through their hands, and that they chip off their respective salaries before forwarding the bars to the United States Assay Office. Now, I don't know much about mining companies; but it seems that this sort of thing can hardly be permitted at the Penobscot mine.

There was a wonderfully rich chute of ore in the Penobscot mine at the time it was sold. It was this rich bunch which gave the mine its fame, and influenced, in a great measure, the purchase. The vein had, however, been opened on in two shafts away from the bonanza, and gave a good notion of what might be expected outside of rich streaks, and might be calculated on for steady working. It was soon seen, after purchase, that the bonanza was of no great extent, and that larger stamping capacity was a necessity. The vein, as far as opened, has shown a supply of fair milling ore, and all the preparations here have been with a view to work sufficient of this to pay interest to the owners without calculating at all on rich chutes. The present workings are altogether in the slate-cap overlying the granite; and, judging from the country around, the contact must be within two or three hundred feet of the present shaft bottom. The future of the mine depends a good deal on the effect of the change from slate to granite; and no one who has seen the other mines of this district in both formations would feel much fear as to the result. Even supposing the change not to be beneficial, there will be a great body of ground above to be worked, which will long occupy the present milling facilities, and the average value of which must be by this time fairly arrived at. The expenses of adding 30 stamps to the mill, putting in a 70 H.P. engine, erecting hoisting-works, completing tram-road, and setting up pumps and flumes to insure a winter's supply of water for the mill, have necessarily run up to a good round sum during the last twelve months, and, consequently, dividends have not budded. The ore has not so far become perceptibly baser; the basest ever worked, and that in which the greatest loss occurred, was from the bonanza; so, if any conclusion can be drawn from this fact, it is that baseness should be prayed for. The mill is an ordinary gold mill, run apparently with ordinary care; and I for one should hate to have the company make me a present of the tailings flowing away, if any condition of working them within the next fifty years were attached to the gift. What the ore yields, on the average, per ton, I can not say; but the regular reports and regular shipments give the stockholders exact figures. It seems certain, however, that for some time past the regular fortnightly shipments have been much in excess of the sum necessary to run the property whenever the heavy construction expenses cease, which will be in a few weeks. As to high-salaried officers, as before said, I do not believe that their existence would have any depressing effect on the bullion product; and their existence at all is merely hypothetical; for they must be, if anywhere, concealed in New York, no trace of them showing on the books at the mine.

Finally, "Does the management wish to depress the stock for speculation, or is it the fault of the ore or methods of handling?" Without consulting the management, I could not answer the first part of this; but if it does, it seems to take a long time and the speculation can not have panned out very well so far. In regard to the ore and the handling of the same, all parts of the mine and property are always open to visitors. Why does not your correspondent go and see the mine instead of trusting to such very unreliable conversations as he seems to have been favored with? GAD.

LEADVILLE (COLO.) STATISTICS.

Special Correspondence of the Engineering and Mining Journal.

Leadville continues to grow and prosper, and there are no indications of the mines giving out, or of any stoppage of new discoveries and developments. As of old, scarcely a week passes but that some new wonder is recorded, or some new find attracts general attention. The Robert E. Lee has been the grand center of interest, and this week the Scooper comes to the front with tons of thousand-dollar ore. Meantime, the Little Pittsburg, Little Chief, Morning Star, Iron, Highland Chief, and other mines continue to yield thousands of dollars daily.

It is a noteworthy fact that the proportion of lead produced by this district, as compared with the entire value of the ore product, is steadily growing less; that is, the lead product fails to keep pace with the increase of the silver product. This is owing to the lack of lead in the newer discoveries and more recently developed claims. The smelters find difficulty in getting lead enough to keep their furnaces supplied, and one or two are idle on that account. This is not the case with such establishments as Grant's or the Harrison works; for they have regular sources of supply from mines carrying a good percentage of lead; but some of the newer smelters find considerable difficulty in keeping at work. The supply of lead holds good in the older mines of the district, such as some of those on Carbonate Hill, like the Crescent, Leadville or Carbonate, and Morning Star, and with the Iron mine and some of the Fryer Hill mines, where much of the ore is rich in lead. But the Highland Chief, Scooper, Chieftain, and others, carry much less argentiferous

material. Leadville will not turn out the amount of lead that has been estimated at the East. One ton of lead bullion to five or six of ore is the average here, without counting ore containing but a very small percentage.

Large amounts of ore are shipped to the smelters at Pueblo and Golden.

The following list of all the smelting establishments in or near Leadville shows the number of furnaces and the approximate capacity of each set of works:

Active smelters.	Number of furnaces.	Daily capacity in tons of ore.
Grant Smelter	8	160
Harrison Reduction Works.	2	35
Leadville, Fuller & Co.	1	25
La Plata, Berdell & Witherill	3	90
Utah, Billings & Eilers	2	70
American	2	30
California	1	20
Malta, Dickson & Co.	3	60
Little Chief.	1	35
Ohio and Missouri, Warner & Co	1	25
Cummings & Finn.	2	40
Raymond, Sherman & McKay	1	20
Elgin	1	30
Total	28	640
Idle smelters.		
Adlaide	1	15
Gage & Hageman	2	35
Total	3	50

The Grant smelter has recently had its capacity more than doubled by the addition of four furnaces. Two of them were fired up late in September, and the other two early in October. Most of the works mentioned above were erected during the spring or summer. The Little Chief Company's smelter started up about September 12th. One of the smelters noted above as idle is so not from lack of ore in the district, but from inability to obtain ore with lead enough to answer. The Adlaide is idle from other causes. The competition among ore-buyers enables the miners to obtain very favorable terms. Ores carrying a high per cent of lead bring remarkably high prices.

The rates of treatment at some of the custom smelters have been lower than they are likely to be hereafter. These rates provided for a deduction of $16 per ton for smelting expenses, for a loss of 5 per cent of the silver contents, and for the payment of 20 to 25 cents per unit for all lead over 30 per cent. Stevens & Leiter, of the Iron mine, have a contract with smelters that amounts to a charge of $16.75 per ton for smelting. It is reported that Grant's smelter deducts $20 per ton for smelting, 5 per cent for loss of silver, and 15 cents a unit for lead. Taking the way in which business and smelting are conducted at the latter place, and the terms are considered as favorable as any that can be obtained in the camp. These works have secured the largest contract in the district, and the bids were open to competition. It will be seen that smelting charges are remarkably low, when the facts are considered that coke comes from El Moro, nearly 240 miles away, and that charcoal costs 16 cents a bushel, and labor $3 a day at the smelters.

Grant's smelter, with four furnaces at work in September, produced 400 tons of lead bullion, averaging 409 ounces of silver per ton, with a total valuation of silver and lead of $212,782. During the same month, J. B. Grant paid $221.000 for ore from the Little Pittsburg Consolidated mine. The product of this smelter is likely to reach $400,000 monthly hereafter, with 8 furnaces running.

The more prominent mines of Leadville are producing about the following tonnage of ore daily: Little Pittsburg, over 100 tons; Little Chief, 70 tons, and will soon be much larger; Chrysolite group of mines, 35 to 40 tons; Duncan, 30; R. E. Lee, 20 to 25; Highland Chief, 50 tons; Iron, 50 to 80 tons; Breese Iron, 50 tons; Morning Star, 35 tons; Argentine, 20. There are many other mines that are turning out large quantities of ore, and the number of paying properties has become too large to easily enumerate. Sometimes the daily output of the mines named is much larger than given above; but the average, taken month after month, does not exceed these estimates. The ore varies in value, some mines generally running from $75 to $150 per ton; others much higher; and a few lower.

MISCELLANEOUS.

Colorado's gold-placer product was much less during the past season than was expected, owing to lack of water. This product had gradually grown, through consolidation and the introduction of hydraulics, from a quarter of a million in 1872, to a half-million in 1878. The yield for 1879 will be far below the latter figure. The forest fires are mostly extinguished. Great preparations are making for Gen. Francis Vinton's funeral, in Leadville.

COIN.

NORTH CAROLINA MINES.

Special Correspondence of the Engineering and Mining Journal.

MANN MINE.—From all appearances, the Forster & Firmin process of amalgamation will be put to the test, Dr. Forster to have final direction. On the tailings, 3000 feet below the arrastras on stream, I have taken 60 to 75 colors in pan, apparently not held in process hitherto used. This mine has a tract of 1000 acres, from which the surface pans fine flake a half-inch to pan anywhere on tract—a chance for hydraulicking.

There has been over 1000 feet of drifting at a depth of 35 feet (waterline), in search of the veins that show first-class ore. There are now on the dump 250 tons first-class ore, and 2000 tons of low grade.

Mr. J. M. English, an old California miner of eighteen years' "Pacific slope experience and management" (superintendent), extended that courtesy so well shown by miners, and furnished your correspondent with data, of which more anon.

CULPEPER MINE.—Major Joseph P. Jenkins, of Nashville, N. C., has just returned from the mine, and brings rich ore from a new vein of considerable width; gold showing well. Placer washings can be conducted to advantage over a portion of the tract of 535 acres; but lack of enterprise has caused this property to be neglected, as well as the entire gold belt of Eastern North Carolina.

BITTER JOE MINES, are a group situated on a creek of that name, which affords an opportunity for hydraulicking—the creek furnishing water and head—and commanding an area of 350 acres, in all of which I have found gold from the grass-roots.

BARNEY BUEL MINE covers a tract of 200 acres between the Sturgis and the Mann, on same pay-streak; surface, drift-rock showing rich, with good gravel eighteen inches below surface, and surface showing color to every pan.

OLD NORTH.

ADDRESS OF THE PRESIDENT OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.

Many of the members of this Association have often, I feel sure, from my own personal experience, been asked, What is the object of the American Institute of Mining Engineers, or what is the advantage of belonging to your Society, or what do you do? etc. Now, it seems proper upon the occasion of this, our first meeting held outside of the United States, that a few moments should be devoted to the consideration of the question, What is the *raison d'être* of the American Institute of Mining Engineers, or what is the vital force that animates it and which in less than nine years has brought it to its present position both as to numbers and usefulness? I would here remark, by way of parenthesis, that we (that is, the Institute) in calling ourselves *American* have not appropriated that word in the way that it is usually done by us (Yankees); for we count among our members many whose homes are on this side of the St. Lawrence, and we draw no invidious distinctions between them and those who reside in the United States. We impose upon them the same duties as upon the latter, and do not let them off as we do the so-called foreign members.

One fact must have struck us all, and that is, that a majority of those who attend and take the most active part in the reading of papers and in the discussions at any meeting are present at almost every one, and that they are not gentlemen of fortune and elegant leisure, but the hardest worked and most busy members of the profession—men to whom attending a meeting means not only an actual outlay of money, but also extra labor before going to and after returning from it, and who are sure to find, upon getting back to their offices, piles of letters and papers requiring immediate attention. And yet there seems to be some mysterious charm about the meetings of the Institute which those who come once within its influence seem ever afterward unable to resist, and to whose power they willingly but inevitably succumb. That, at least, is the experience of many that I now see around me.

The first and, I think, by far the most important function of the Institute, and that which really has caused it to grow so quickly and so vigorously, is that it *prevents mental waste* and stimulates men to intellectual activity outside of the mere routine duties of their profession. One of the greatest triumphs of science, one of the points in which modern civilization distinguishes itself most from the ancient, is *the utilization of waste products*—in turning that which formerly was either useless or hurtful to mankind into a source of wealth or a thing of beauty. If he who causes two blades of grass to grow where one grew before is to be praised, how much more he who converts some useless and fever-producing swamp, by drainage and cultivation, into a beautiful meadow? But there are many things in the world which may be wasted or which may be hurtful to the human race besides the mere materials of which the globe is composed, or the unused products of our industries—they are the fruits of men's experience, the results of their thoughts, and the latent capacity of the brains of trained men for useful work when not occupied by their regular business. This capacity, if not utilized, may lead the possessor of it into occupations which will do no good to himself or to mankind, or it may be gradually weakened or lost if not employed. There is scarcely an engineer, however limited his practice may have been, who has not made some experiment, met and overcome some difficulty, or solved some problem that has not yet been discussed in our technical literature. These may not be of the highest importance, and may have occurred in the practice of dozens of other engineers; but so long as the results obtained have not been reduced to writing and put on record in some well-known work or periodical that is accessible to the profession, they are generally waste products so far as the world at large is concerned; for they may die with the possessor, or, even when they have been carefully preserved by the original investigator, may be sold as waste paper by some one into whose hands they may fall and who will be unable to appreciate their value. Before the organization of our Institute, the results of much thought, of great experience, and many experiments lay scattered over this continent in the memories of the managers or foremen of works, in the note-books of engineers, and in the drawing-rooms of industrial establishments connected with mining. There was no center toward which these fragments were attracted, and at which, when collected, they were formed into a compact whole, accessible to, and of importance to, every one. Now, the case is different; for the American Institute of Mining Engineers offers to its members, as the analogous societies of other professions do to theirs, not only a means of, but also an incentive to, utilizing this great mass of valuable information which is constantly accumulating in all parts of the country where mining and metallurgy now are and have been for the last ten or fifteen years making such great strides in advance. Under ordinary circumstances, an engineer who has made a series of experiments which has developed some new law or property of matter which promises to have a more or less important bearing upon the future of some branch of mining would often be deterred from publication. I do not, of course, refer here to experiments undertaken for the purpose of determining some fact to be used by those who have been at the expense of the investigation in their own business; these are professional secrets, belonging to those who have paid for them, and are as sacred as the secrets of the lawyer, the doctor, or the clergyman, and no true engineer would ask or even wish them to be divulged, except with the consent of their owner; but I refer to those experiments which all of us make, and which there is no commercial object in concealing. Now, it is generally the case, that such investigations do not cover sufficient ground to form the basis of a book; and if they do, the engineer who proposes to publish them, if they require plates to explain them, experiences great difficulty in finding a publisher; for the latter naturally looks to the question of how the book will sell, and what it will cost to get it out, and is not likely to encourage the publication of a work which, although intrinsically very valuable, would be very expensive to set up and illustrate, and of which only a small number of copies would be likely to be sold. The author is then met with those pleasant little suggestions,

such as to cutting down the size, tearing out expensive illustrations, making the work more popular and less scientific, advancing the whole or part of the cost, etc., with which some of us are familiar, until, finally, he becomes discouraged and lets the matter drop, finding that the world is unwilling to listen to him in that way, unless he pays them to come to hear him; for such a work does not appeal to the general public, but only to a select few who incorporate the data obtained in general treatises on mining, metallurgy, etc., or who use it in their own practice. If, on the other hand, there is not material enough for a book, but only for a short essay, it is difficult for him to find a periodical willing to undertake the publication of it, which will reach all those to whom his article would be of interest, and the same difficulty as to illustrations occurs. In many cases, the course of experiments undertaken requires years—perhaps a life-time—to bring it to a successful conclusion, and in that case it does not furnish matter for a magazine article. If, however, at any time a member of an association such as ours should think that he had discovered some fact or principle which had been theretofore unknown to the world, and which promised important results, at the first meeting thereafter he would call the attention of the members to it in a preliminary note, giving only a general outline of what he had done, and of what he proposed to do, reserving details and conclusions for his final paper. Should he, as is often the case, be simply re-investigating some problem that had already engaged the attention of others, or should some other member be engaged in the same line of study, it would be brought to his attention at once in the discussion that would take place after the reading of the note, and he would be informed of what had already been accomplished, or at least referred to some authority from which he could obtain such information; many of the members would be likely to give him isolated facts, the results of their own experience, which would aid him to explain points about which he was not yet clear.

If what he was undertaking had been already done, he would be in the same position as a traveler, who, when engaged in exploring a to him unknown country, should suddenly be informed that it was well known, and had been thoroughly mapped. The purchase of a guide-book or geography which had been recommended to him would convince him of the fact, and he would then employ his time and money in some more profitable enterprise. Thus, waste is avoided. If, on the other hand, he should really be engaged on some original work which promised to be of value to all, he would be assured of it by the discussion of the subject, and would pursue his investigations with renewed vigor, feeling certain, in the first place, that it was not labor in vain; and, in the second, that he had placed himself on record by the reading of his note and by its publication in the transactions of the Institute, so that no one thereafter could dispute his claim to be the original investigator or discoverer, or, at least, to be the first to have announced to the world the fact or law which he had discovered. It is very important that such announcements should be made as soon as possible; first, because the world gets the advantage of the knowledge sooner; and secondly, because it avoids much bitter and useless discussion afterward as to the original inventor or discoverer.

The existence of such an association, to which the results of such work can be made known, and by which its value can be unofficially but, at the same time, really and decidedly passed upon, is an incentive, particularly to the younger members of the profession, to make original inventions; to solve or help solve some problem in mining or metallurgy; to try to interest themselves in something outside of the mere routine duties which their professional positions require of them; for, although a student, upon graduating from a technical school, may receive a diploma which will entitle him to call himself a civil, mechanical, or mining engineer, and be acknowledged by all other engineers as such, yet his position in his profession can only be fixed by what he can show to the world that he has done and is capable of doing, and there is no way, I feel sure, in which a young engineer can show so easily, so surely, and so quickly his real ability, and have it recognized, as by original work communicated to an association such as ours in notes and papers, and by taking part, at the meetings, in the discussion of subjects with which he is familiar. In this way, a waste product is utilized; for the mining engineer, placed, as he frequently is, far from the society of congenial persons, has often much time, which, under ordinary circumstances, would not be employed, and which he now utilizes in preparing a paper for the meetings of the Institute.

The second and, in my opinion, the next most important function of the Institute is the bringing together of the members of the profession who are scattered far and wide over the whole country, enabling them to become personally acquainted with each other, and thus tending to the formation of a professional standard. Ours is really a lonely profession. The lawyer, the physician, the clergyman, and even the civil and mechanical engineer, reside, in most cases, in more or less thickly populated parts of the country, where they are brought more or less in contact with other members of their professions, and thus are kept to a certain extent *au courant* of what is being done outside of their own special routine of duties. They are frequently called into consultation with each other, have access to a much larger professional literature, and are constantly brought into contact with educated and cultivated people of all kinds. But the mining engineer, except in special cases, must spend most of his time where his mine or his furnace is located, and these are generally situated far from the centers of civilization, their position being regulated by the existence of the ore or the fuel. The nature of mining enterprises is not such as tends to build up large cultivated societies around the works, so that the engineer is generally thrown upon his own resources, having access to no professional books and periodicals but those in his own library, which, in most cases, can not be very numerous, in consequence of the high prices which must be paid for them. His only associates are, as a rule, his foremen and the workmen, and he is frequently cut off from the society, not only of other members of the profession, but also from that of other educated persons who are familiar with what is going on in the outside world. Until recently, there were few if any technical periodicals which were of sufficiently general circulation among mining engineers in this country to serve as a means of communication between those who were thus isolated, and they seldom met together for consultation, so that each went on working out alone and unaided those problems which his duties required him to solve; those who were in the habit of using books knowing more of what was being done on the other side of the Atlantic than at mines within one hundred miles of them, where the conditions were more or less similar to those at their own home. In fact, before the organization of the American Institute of Mining Engineers, a majority of well-informed people, of those actually taking part in business and professional life, did not know that there was such a profession as mining engineering; or, if they had by accident heard of it, they had no idea what it was—in fact, I think we may admit that among the profession itself there was no very clearly defined idea of what a mining engineer was. But the great increase in the number of mining engineers, the enormous development in this country of all the industries connected with and dependent upon mining, rendered such a condition of affairs no longer possible; and when, in May, 1871, a few gentlemen met at Wilkes-Barre, Pennsylvania, and organized the American Institute of Mining Engineers, it was at once welcomed by the other members of the profession, and its success was assured from the very beginning. That it supplies a real want is best shown, I think, by its six volumes of transactions, by the records of its meetings, and by its list of members, whose achievements in all branches of mining and the associated industries are well known and recognized in all the civilized countries of the world. There is no doubt that the effect of our meetings, our publications, and of the publicity given to our proceedings, has been to raise the standard of the profession of mining engineering and to make the public appreciate its importance. Now, although the Institute is not like a university, an institution for conferring degrees, and, although it does not in any way guarantee the integrity or professional standing of its members, yet the rules which govern the admission of its members, although far from stringent, are intended, and practically do, prevent unworthy persons from being admitted, except in rare instances. It is not the intention of the rules, as I understand them, to require those who propose a new member, to make such an examination of his capabilities, and to give such reference as to his character as would enable the council to decide upon and to certify to his exact standing; but the door is open to all who take an interest in mining, or the sciences allied to it, and who bear a good name. They may enter as members; or, if not eligible under that head, as associates; they may be engineers, lawyers, doctors, or owners of mining property. The mere joining of the Institute confers no title or degree; each one must thereafter make his position in it for himself. It is a true republic, and its motto is, "To each according to his deserts."

Sometimes we find a man who, before entering the society, was comparatively unknown to the other members, but who, in some quiet corner of the country, has been hard at work; in a few short months, he comes to the front and takes rank with the *élite* of the profession; his papers and the part he takes in the discussions giving him not only an American but a European reputation; the success which attends his *début* as an author spurs him on to new and fruitful fields of research which the knowledge he has gained at the meetings enables him to cultivate with increased effect. Others, who may have joined with too high an idea of their own, or with too small an opinion of the ability of their professional brethren, learn to estimate themselves and others at more nearly their true value.

Some find the atmosphere of the Institute uncongenial, and leave a society where brains, hard work, and good humor are about the only things that enable a man to take a prominent position in it. The result of bringing together, not as the representatives of rival interests but socially and informally, the various members of the profession, who live far from each other, and, being engaged in dissimilar occupations, would, in the ordinary course of events, seldom if ever meet, has been the formation of friendships which are of the strongest character, and which will, in my own case, as in many others, I feel sure, terminate only with life.

Another advantage afforded by the meetings is the opportunity of visiting many of the most important industrial establishments of the country, not only in company with the men who have constructed and are managing them, but also with those who are most competent to criticise them.

Under these circumstances, an engineer who is an expert in only one branch of his profession, is enabled to keep himself intelligently *au courant* of what is being done in the parallel but collateral branches, and thus obtains many valuable hints which he can utilize in his own particular department.

Another important and agreeable function of the Institute has been the opening up and maintaining of friendly relations with our professional brethren across the water. This, which was so pleasantly and successfully inaugurated at the Centennial, has been kept up without intermission, and scarcely any foreign mining engineer who visits this country for the purpose of examining its resources fails to avail himself of the facilities offered by our Society; and all of our members who have visited Europe since 1876 have found the attentions shown to Europeans in America by us have been thoroughly appreciated and returned abroad; and I hope that in this respect the usefulness of the Society will increase rather than diminish.

There is another function of the Institute, which is, perhaps, the most agreeable one, and that is the breaking up of our every-day routine work three times a year, and forcing us to lay it down, thus turning our minds into a new channel for about a week at a time. Now, although we all know that attending a meeting means harder work before and after it, yet we always look forward to the next one and backward to those we have attended with the most pleasant feelings; and when we return from one of them, we take up our daily duties with a feeling of having renewed our youth, and being able to do more than if we had not been away. We enjoy the meetings as boys at school do their holidays, and a holiday it really is to most of us. I would, therefore, say that our answer to the question, "What is the '*raison d'être*' of the American Institute of Mining Engineers?" may be summed up as follows: Our Institute is useful in preventing the immense amount of valuable information, which is being accumulated daily by its members and others, from being lost, and in placing it in a convenient form at the disposal of the scientific world; in encouraging its members to do original work, and to communicate the results thereof to the public; in raising the standard of the profession, and in causing the outside world to understand what a mining engineer is; in bringing the various members of the profession together, so that they learn to know and appreciate each other; in giving the mem-

bers an occasion of visiting, in company with a great number of experts, the various industrial centers of the country, and of inspecting the improvements made from time to time; in maintaining pleasant and profitable relations with foreign engineers; and in making a periodical break in our routine duties, and giving us all a week's holiday every three or four months, during which we can talk over together matters connected with our profession in an informal way; and, finally, in forming, cementing, and maintaining professional friendships, which are, in many cases, the strongest and truest.

THE AURIFEROUS GRAVELS OF CALIFORNIA.*

By W. A. Goodyear, M.E.

In the year 1871, the writer, as an assistant on the State Geological Survey of California, under Prof. J. D. Whitney, spent about six months of active field-work in a careful investigation of that portion of the auriferous gravel region of California which lies between the north fork of the American River on the one hand and the Mokelumne River on the other, including the greater portion of Placer County and the whole of El Dorado and Amador counties, so far as these ancient gravels extend from the very base of the mountains, along the edge of the Sacramento Valley, northeastward toward the crest of the Sierra Nevada range.

The problem of the auriferous gravels of California is certainly one of the most complex and intricate in its details of all the questions that have ever puzzled geologists in this or any other country. Yet its solution, in broad terms, is comparatively simple.

Nothing like the old "Blue Lead" theory will ever account for it. The idea either of one or several great rivers running for long distances in a direction nearly parallel with the present axis of the Sierra Nevada, is a myth that can never be substantiated. The supposition that the Columbia River ever came through there is simply absurd; and the proposition that these gravels are the work of glaciers, or that they are deposits made in the bed of a lake or sea, is equally untenable.

The whole character of these gravels, when studied in detail, proves, beyond a question, that they are the work of running streams of fresh water. The question is, Whence came these streams, in what direction did they run, and how did they act; and what has been the history from that time to this?

Contrary to what has been a widely received opinion, the western slope of the Sierra Nevada has not been subjected to any considerable movements of elevation or depression since the commencement of the gravel epoch. I speak now of the bed-rock. There are, of course, many localities, especially in the northern portion of the Sierra, where great additions have been made to the height of the range by the enormous mass of volcanic materials which has been piled on top of it. But, tremendous as the volcanic energy was for a period, its seat of action lay almost exclusively to the eastward of the gravel region, which was merely overwhelmed with its *débris* and occasionally shaken by its earthquake throes, without, however, sustaining any considerable change in position or altitude of the bed-rock.

This being the case, it is seen at once that the *general* direction of the drainage of this region throughout the period of accumulation of the auriferous gravels must have been southwesterly, the same as now. And the character and distribution of the gravels themselves, together with the directions of the ancient channels, wherever these can still be definitely traced in the bed-rock, prove beyond a doubt that such was indeed the fact.

But, in other respects, this drainage took place under circumstances which were very different from those which exist to-day.

At that time, no cañons of any considerable depth existed here, and the western slope of the Sierra was a broad and moderately hilly region, 50 or 60 miles in width, having a general average inclination of something like a hundred feet to the mile, in a southwesterly direction from near the crest of the range to the edge of the great valley of California, which was then, in all probability, partially occupied by an extensive but very shallow lake or inland sea.

The hills were not very high, rarely rising more than 200 or 300 feet (oftener far less) above the beds of the adjacent streams. But there were occasional ridges and ranges of hills which rose much higher, sometimes even 1000 or 1500 feet above the immediately surrounding country.

Such, for example, is a conspicuous range or series of bed-rock hills, which still stretches in a southwesterly direction from near the crest of the range along the divide between the south and middle forks of the American River, nearly to Georgetown, in El Dorado County.

Another prominent example of the same kind is the "Bear Mountain" ridge in Calaveras County, which consists entirely of bed-rock, and is situated very low down on the western slope of the Sierra, extending nearly parallel with the axis of the range, and in an almost unbroken ridge southeasterly from near the Calaveras River to the Stanislaus.

The situation of this ridge is such that it has formed a kind of dam or barrier, to which I shall refer again hereafter.

The outlines of the whole drainage basins of the larger streams during the gravel epoch were, of course, marked by the lines of these exceptionally high ranges of hills, and, wherever these ranges were high enough to tower above the general flood of volcanic *débris*, which subsequently buried the gravels, there the same ranges still continue to mark the outlines of the larger drainage basins of to-day, and, to that extent, the present drainage system is identical with the old.

But, as already stated, throughout most of the country the hills were low, and among these lower hills meandered the streams in whose channels the ancient gravels were accumulated. These streams were, of course, extremely crooked, as was necessarily the case in a country so situated, where there was almost absolutely no plane surface, but all was more or less undulating. Their general direction was southwesterly. But they often ran for short distances toward every imaginable point of the compass, even sometimes directly northeast toward the crest of the Sierra. Similar cases can be found among the streams of to-day, but they are not so common as they were then. Of course, there were occasionally places where for several miles even the larger streams themselves would run south or southeast; that is, nearly parallel with the axis of the mountain range, before turning again southwest in their course toward the valley. This was particularly the case in the region northwest of the Middle Yuba River. And this circumstance has been the only basis for the old "Blue Lead" theory, the central idea of which was that one or two or three great rivers had once flowed for hundreds of miles along the western slope of the Sierra in a direction nearly parallel with its crest.

One notable case of this kind (involving no great distance, to be sure, but enough to illustrate the matter) is that of the ancient and modern north forks of the American River. The ancient fork at one time ran from the vicinity of Gold Run, or a little below, and somewhere about Indiana Hill or Illinois Hill, for a number of miles, in a direction south or a little east of south through Iowa Hill, and near Wisconsin Hill, to a point somewhere in the neighborhood of Forest Hill or Yankee Jim's, in Placer County, where it met the old middle fork, and there turned again southwest. The modern fork flows from a point one or two miles northeast of Colfax, in a general direction a little east of south for five or six miles, to the mouth of Shirt-tail Cañon. This is, indeed, a remarkable and, in this region, an uncommonly close case of parallelism between the ancient and modern streams. But the only point which I wished to elucidate here was, that the fact of the ancient streams having sometimes flowed for several miles in a south or southeasterly direction has been the occasion and the basis for a "Blue Lead" theory which, for many years, has misled the people, and befogged the whole matter.

The streams in whose channels the ancient gravels were accumulated were generally shallow. Here and there, channels were excavated into the solid bed-rock to depths of from 100 to 200 feet or more. But these were rather the exception, and not the rule.

The streams themselves were, in all probability, subject to greater variations in the quantity of water which they carried at different times than are the streams of to-day. For example, a stream which, at one time, only contained water enough to enable it to transport small quantities of sand—or possibly nothing at all, unless it were the finest clayey silt—would, at other times, be subject to heavy and sudden floods, which would hurl along great quantities of coarser materials, including sometimes boulders of many tons in weight; a large portion of which materials would, in case of an equally sudden subsidence of the flood, be left behind, and might either be scattered for a considerable distance along the bed of the stream, or, if the stream had overflowed its banks, might be spread broadcast over a portion of the adjacent country.

There can be no question about the power of water—even on slopes of less than one half of a hundred feet to the mile—to transport boulders as large as any that are found in the gravel region, provided only that the volume of the water be sufficiently great, and its rush correspondingly rapid. Nor would it require much time for such a flood to transport heavy materials to considerable distances. It is more than probable that such occurrences were not uncommon during the gravel epoch.

I will call attention here to another point. In those numerous cases where great and broad channels have been found excavated in the solid bed-rock, by the ancient streams, to depths of from 100 to 200 feet, or even more, below the rim rocks on either side, it is not fair to assume that the same stream had at any one time the same depth of channel throughout its course. On the contrary, it is far more probable that even while these streams were flowing in the deepest parts of their rocky channels, the same streams were, in other parts of their courses, running between low banks which, in many cases, were not high enough to prevent frequent overflows.

But floods heavy enough to transport large boulders occurred only at intervals, and were of short duration; and, on the whole, the process of accumulation of these gravels was a slow one, and, humanly speaking, a very long one. It is not at all unlikely to have occupied hundreds of thousands of years.

I see no necessity, however, for supposing that any long period of excavation preceded a distinct and subsequent period of accumulation. It is certain, of course, that at any point where the bed-rock has been excavated, the excavation at that particular point must have been finished before the same point was finally buried beneath the growing accumulations. But I see no reason why, in different localities, the two operations should not have proceeded *pari passu*, excavation occurring at one place, while, at the same time, accumulation was progressing at another. Indeed, when we consider the varying grades which the ancient streams must have had, as well as the ever-varying conditions which attended their existence, it seems more than probable that such was the case from the beginning.

These streams flowed at first on the almost naked surface of the bed-rock, and necessarily sought the lowest channels they could find among the inequalities of that surface. The portions of these channels which first became filled with *débris* were those where the grade of the streams was gentlest, and where, as an ordinary rule, the current was most sluggish. When, however, these portions of a channel had become filled to a certain height, that is, up to, or perhaps a little above, the general level of the lower portions of the surrounding country, then the banks no longer proving high enough at all points to restrain the current, the stream at some point or other would burst through or over them, and, thus leaving its old bed dry, would seek out a new channel for itself among the adjacent knolls and hills for a distance which might vary, according to circumstances, from a few rods to several miles. The new channel would be crooked like the old one, and, in due course of time, would become filled in its turn with *débris*, when the stream would again burst its banks, and choose still a different course. And thus the process went on slowly but surely, not with one stream merely, nor with several, but with the hundreds—nay, the thousands of streams that constituted the whole drainage system of the mountains, until, at length, over extensive regions, all the lower depressions were filled with gravel, the lower knolls themselves were covered with it, and, as its depth increased, it crept steadily higher and higher up against the sides of the larger hills, and every square foot of the buried surface of the bed-rock was worn and smoothed by the streams which brought its gravel covering.—*Mining and Scientific Press (San Francisco), September 20.*

(TO BE CONTINUED.)

*Abstract of a paper read before the California Academy of Sciences, Monday evening, September 15th, 1879.

Since 1876, 132 American railroads have been sold under foreclosure.

PROGRESS IN SCIENCE AND THE ARTS.

General Science.

The National Board of Health, in its circular on "Disinfectants and How to Use Them," makes a clear distinction between disinfectants and deodorizers, and disseminates the wholesome truth that "disinfection can not compensate for want of cleanliness or of ventilation." The recommendations of the board as to the disinfectants to be employed are as follows: For fumigation (that is, the purification of an infected atmosphere), roll-sulphur; for sewers, cess-pools, and the like, sulphate of iron (copperas), dissolved in water in the proportion of 1½ pounds to the gallon; for clothing, bed-linen, etc., sulphate of zinc and common salt in the proportions of 4 ounces sulphate and 2 ounces salt to the gallon. The interaction of these two compounds doubtless results more or less promptly in the formation of sulphate of sodium and chloride of zinc, which last is recognized as being the most energetic of the mineral disinfectants. The recommendation of the board to employ the zinc compound in the form of sulphate (with salt), instead of applying the chloride of zinc directly, may perhaps be explained on the ground that the sulphate of zinc is a stable salt that remains in solid form, and may be exposed to the atmosphere without change; whereas the chloride of zinc can not be preserved in solid form save in hermetically-sealed vessels, having such a powerful avidity for moisture that it rapidly liquefies by abstraction of moisture from the air. This property renders zinc chloride inconvenient to handle. By its indirect production after the recipe of the board, this objection is overcome. The board does not recommend the use of carbolic acid for general uses, for the reasons that the quality of the commercial article varies greatly, that it is difficult to determine its quality, that it must be used in comparatively large quantity to be serviceable, and that it is liable, by its strong odor, to give a false sense of security.

New Theory of Terrestrial Magnetism.—The theory lately advanced by Professors Perry and Ayrton, of Japan, to account for the magnetism of the earth, and which has provoked much discussion, is thus briefly summarized in the *Philosophical Magazine*. They find this cause in the revolution of the earth beneath the electrical charge originally and at all times present in the atmosphere. By calculation, they find that the difference of potentials between the earth and space necessary to produce a distribution sufficient to bring about all the observed magnetic effects would be represented by 54,000,000 Daniell cells. And, adds our authority, they prove that "if the earth be electrified, it must, from its very rotation, quite independently of all other bodies in the universe, be magnetic; and if it consists of a shell of iron, thick or thin, then that the law of distribution of magnetism produced by this electrical charge in mechanical rotation will be identically that given by Bist; and lastly, if the earth were wholly of iron, a difference of potentials of about 54,000,000 volts between it and space would be sufficient to produce the necessary amount of charge."

Notes and Comments.—At the late Exhibition of the *Palais de l'Industrie* in Paris, an experiment upon *phosphorescence as a mode of illumination* is said to have given very interesting results. A dark room, which had been prepared with phosphorescent window-panes, is reported to have been tolerably well illuminated from this source alone. Details of the trial are wanting, and it would be premature to draw sanguine inferences from premises so vaguely stated.——At the last meeting of the Franklin Institute, Dr. Robert Grimshaw exhibited samples of work done by Mr. J. Hall's curious tool for *boring "rectangular holes,"* and described the construction and action of this mechanical novelty, which attracted much attention at the late Paris Exhibition. Our readers are referred to the *Journal of the Institute* for details.——The production of *tempered glass*, though the product has fallen into some discredit in Germany, by reason of the tendency to spontaneous disintegration with violence, which it has been observed to possess, is said to be decidedly on the increase in France. The causes of this peculiar behavior are said to have been definitely ascertained to be due entirely to the improper regulation of the temperature of the tempering bath, a difficulty said to be now entirely overcome.——M. Cros, in *La Nature*, hopes to be able to obtain an approximate solution of the fixation of *colors by photography*, by preparing several photographic impressions of any object by passing the light through chemical solutions, which arrest respectively the green, the yellow, and the violet rays. The negative from which the green, for example, has been excluded, if developed under green light, appears intensely green where the object was the greenest, and pale green to black where the green was mingled in the original with other colors, or was absent. He proceeds by combining these three negatives, and superposing the images by the help of reflecting prisms.——The International Exhibition at Sydney, N. S. W., was opened on the 17th of September, and gives promise of being successful. America is represented by about 150 industrial exhibits, as compared with about 800 from Great Britain, 700 from Germany, 350 from France, 170 from Austria, and 236 from Belgium.——The *Scientific American* notes, as a remarkable fact, that while the production and manufacture of flax was at one time an important domestic industry, it has been nearly ruined by the advent of cheap cotton. In 1810, with a population of about 7,000,000, there were produced in the United States over 21,000,000 yards of flaxen cloth made in families; while at the present time, with a population estimated at fifty millions, the production will not materially exceed five million yards.——It is reported that the London "Cloth-Workers' Company" has given the sum of $67,500 for the erection of buildings in connection with the Leeds College of Science, to be specially devoted to the textile industries and dyeing and color-printing. They have further agreed to maintain this department of the school for five years. ——The West Side Association met at the Fifth Avenue Hotel, on the evening of the first instant, to discuss the question of a site for the proposed World's Fair. A map of the site advocated by the Association was shown by the president. It lies on the west side, between 110th and 125th streets, and includes, besides much other property, the Morningside and Riverside Parks, and has a total area of 300 acres. It was claimed that there was no other location on the Island suitable for the purpose, and that it would make a difference of $5,000,000 to the city of New York whether the exhibition was held on or off the Island.

Technology.

Utilization of Blast-Furnace Slag.—Our contemporary, London *Iron*, devotes a long editorial, in its last issue, to a narrative of the results obtained in England in the utilization of blast-furnace slag, and from the showing made, it would appear that this vexed problem had at length reached something like a practical solution. The success which has attended the adoption of several modes of converting this *bête noire* of the iron-master into useful products, can, as our neighbor points out, only be expected, for some time at least, to keep down the accumulation of the slag somewhat, with the attendant benefit of considerable profit to the trade. These gratulatory expressions, as we glean, have special reference to the procedures devised and introduced into practice by three enterprising inventors—Messrs. Charles Wood, Bashley Britten, and Frederick Ransome. Mr. Wood, whose efforts in this direction are alluded to as being the most successful, converts the slag into sand as it is run from the furnace, and from this sand, mixed with a certain proportion of selenitic lime, he manufactures bricks. These bricks, it is affirmed, possess many points of superiority over ordinary bricks, "and are gradually finding their way into considerable use for constructive purposes." Besides this, Mr. Wood utilizes this slag sand in the production of concrete, cement, and mortar; and he is said further to have successfully introduced the manufacture of a non-conducting substance by reducing the slag to a fibrous condition, known technically as silicate cotton.

"Another direction in which slag is now utilized is in the manufacture of glass bottles, and, singular as it may seem, glass railway-sleepers." In connection with the conversion of slag into glass products, the name of Mr. Bashley Britten is associated, and most of our readers will recall our earlier mentions of his labors in this direction. He has succeeded, according to our authority, in firmly establishing the manufacture of glass from this source on a commercial scale; "and there are now works in Northamptonshire where the slag of the iron ores of that county is converted into glass bottles, which, we are told, are superior to those of ordinary flint-glass for strength."

The idea of employing this material in the production of cheap railway sleepers—a general reference to which novelty appeared in these columns a few weeks ago—is credited to Mr. Frederick Siemens, of Dresden, who has devised a new process for toughening the products obtained. A number of such sleepers, it is stated, have been laid down on the North Metropolitan Tramway system at Stratford, where they will be subjected to an exceptionally severe test of their wearing qualities.

Finally, we must not omit to mention the name of Mr. Frederick Ransome, an inventor whose name will be familiar to all the readers of the JOURNAL, in connection with the artificial stone which bears his name, and who, says our authority, has succeeded "in producing a pure white cement, *of greater strength than the best Portland cement.*" We are responsible for the foregoing emphasis, because the statement which our neighbor makes, if verified by the facts of the case, would justify us in heralding Mr. Ransome's invention as one of the first importance. His procedure, so far as we can learn, consists simply in taking the granulated slag (or slag sand) of Mr. Wood, before alluded to, reducing it to a fine powder with from one to two parts, by weight, of chalk or limestone, and burning the mixture at a moderate temperature. In addition to its pure white color, which renders Mr. Ransome's cement preferable for decorative uses to Portland, the results of comparative tests given by *Iron* are certainly extraordinary. For example, we are told that of samples two days old, the Portland gave way at 510 lbs., while Ransome's went up to 740 lbs. Another sample of Ransome's, 21 days old, gave a breaking strain of 1440 lbs., while a sample of Portland, 7 years old, gave 1327 lbs. All these samples were 1½ inches square at the breaking point (and were presumably tested under the same conditions). When such satisfactory advances in the art of utilizing this troublesome waste product are recorded from abroad, it is time that our iron-masters looked into the subject.

Ornamenting Glass.—A recent French invention for decorating glass objects so as to produce metallized effects consists in substituting a reducing gas or vapor, such as hydrogen or common coal-gas, for the air by which it is now blown into molds or shaped by hand. By this artifice, the salts of the metallic oxides which have been added to the glass in the course of its manufacture, are reduced, and metallized effects more or less varied and intense are produced, according to the composition of the glass. It is apparent that the process is applicable to a wide range of glass manufacture. One of the most beautiful of these effects is produced by inclosing a thin layer of gold-leaf between two layers of glass, and subsequently expanding the glass so as to break up the gold into infinitesimal fragments, which, remaining disseminated throughout its mass, produce a most brilliant spangled effect—like that presented by the mineral substance known as *aventurine*.

Solvay's Ammonia-Soda Process.—It has been generally understood by those interested in technical processes that the successes which M. Solvay had made in rescuing the old ammonia process of Dyar and Hemming from the limbo of abandoned inventions to which the failure of a score of subsequent inventors had seemed irrevocably to consign it, depended largely upon the skill and ingenuity with which this gentleman had improved upon the details of the ammonia process and upon the apparatus for operating it.

The address of Prof. Dewar, to the Chemical Section of the British Association for the Advancement of Science, enables us to present to our readers some details concerning M. Solvay's procedure, which we do not remember to have seen in print. With the general principles of the ammonia-soda process we may presume our readers to be already sufficiently familiar, from the several articles upon the topic which have been given in this and in the editorial department of the JOURNAL; and we shall only give, in what follows, the more important of the improvements by which M. Solvay has succeeded in raising it to the rank of a successful commercial industry.

According to Prof. Dewar, Solvay condenses the vapor of the free ammonia—which he recovers from the chloride of ammonia, formed in the chief reaction by distillation with lime—in a solution of salt, and into this ammoniacal brine he injects, under a pressure of about two atmospheres, the gases of lime-kilns. The brilliant success of M. Solvay, Prof. Dewar holds, is owing to his thus employing pressure to promote the absorption

of carbonic acid by the ammoniacal brine, and to his ingenious mechanical contrivances to avoid the heating of the liquid while the absorption is taking place, notwithstanding the fact that the chemical reaction that takes place is accompanied by a considerable disengagement of heat. These, according to Prof. Dewar, are the prime factors which have contributed to M. Solvay's success, and they are worthy of special consideration, as indicating what trifling circumstances, comparatively speaking, may determine the success or failure of a great industry.

Engineering.

An Ingenious Copying Apparatus was described at the September meeting of the Franklin Institute, under the name of "Bartelet's Duplicator." The design of the apparatus is to enable one to take a number of copies of letters, notes, documents, circulars, drawings—in short, of any thing written with a pen, and with any colored ink that may be desired, or in a variety of colors, as may be wished, with drawings. The apparatus, which is exceedingly simple, consists of a sheet of firm jelly, prepared according to the following recipe, namely, gelatine (or glue), 1 part, by weight; swell in two parts cold water; render liquid by gentle heat; add 4 parts of glycerine, a few drops of carbolic acid (as a preservative against putrefaction), and enough whiting to give a milky appearance to the mass. This mixture is poured into a shallow trough, or form of wood or metal, which is usually furnished with a hinged cover or lid, and clasp, to close it up when not in use.

The operation of copying is as follows: The copy, letter, drawing (or whatever it may be) is made on ordinary paper, with a tolerably thick aniline ink, and, when set, it is laid face downward on the jelly, and gentle pressure applied to bring all parts of the copy in good contact. It is then peeled off, and will be found to have left a perfect transfer on the gelatine plate. To copy from this it is only necessary to lay a sheet of paper over the transferred impression on the jelly, to pass the hand over it well a couple of times, and peel it off as before, and the result will be a perfect duplicate of the original. By this simple means, from 30 to 50 copies can be made almost as fast as the paper can be laid down and removed.

When the copies begin to show signs of becoming faint, a fresh original must be prepared (or the first original may be used again if a thick pen and plenty of ink have been used in making it), the impression must be washed out of the jelly with a sponge and cold water, and a fresh transfer made, which can be printed from as before. When the jelly surface receives an injury, it is easily brought to a smooth, level surface by melting it down over a flame or in an oven. Before using after this, however, a sponge, dampened with cold water, should be applied to the surface.

Steel Ropes.—The London *Engineer* says that the immense steel ropes intended for the raising of the German iron-clad Grosser Kurfürst are now preparing at Sir George Elliot's works at Cardiff. They are made from the finest steam-plow wire-rope steel, and are 8 inches in circumference. All the fittings are of cast-steel.

It is recommended that the manufacturers of ammonia soda calcine it very thoroughly so that it may not contract further on ignition. Furstenau says that the great and unequal shrinkage, which this soda sometimes undergoes at a red heat, is the cause of the uncertain and unsatisfactory results when it is used in the manufacture of ultramarine.

Professor Asa Gray has been led to conclude that self-fertilization is neither the cause, nor a perceptible cause, of the prepotency of the European plants which are weeds in North America. A cursory examination has brought him to a similar conclusion regarding the indigenous weeds of the Atlantic States—those herbs which, under new conditions, have propagated most abundantly and rapidly, and competed most successfully in the strife for the possession of fields that have taken the place of forests.

Dr. Phipson has succeeded in obtaining from organic substances present in fresh water a new and interesting product which he has named "characene." It is a kind of camphor, which gives to the algæ in general, and to the waters in which they grow, that peculiar, marshy odor, which has hitherto been thought to be one of the results of vegetable decomposition, but which really arises from a substance produced by certain plants, while they are alive and vigorous. As yet, few of its properties have been definitely ascertained.

The English Emigration Movement.—London, Wednesday, October 15, 1879.—A conference of delegates representing 140,000 miners, was held to-day at Leeds, Mr. MacDonald presiding. A resolution was passed in favor of a national emigration scheme to lessen the competition among miners. The scheme consists of a system of small weekly subscriptions; subscribers after a certain time to ballot for chances to emigrate. Those going to America will receive £6 ($29.10) and passage money; to Australia or New Zealand, £12 ($55.80) and passage money.

Prof. Klebs, of Prague, announces that the benzoate of soda is the best antiseptic in all infectious diseases. It acts, as the experiments of the author show, very powerfully. It is claimed that a daily dose of from 30 to 50 grams to a full-grown man will render the poison of diphtheria inoperative. The benzoate is prepared by dissolving crystallized benzoic acid in water, neutralizing at a slight heat with a solution of caustic soda, drying, and then allowing the solution to crystallize over sulphuric acid under a bell-glass. Large doses do not appear to be absolutely necessary. Good results may be obtained by the daily administration of about 12 grams.

Explosion in a Coal Mine.—Pottsville, Pa., Oct. 1.—An explosion of fire-damp, by which four men were severely burned, occurred yesterday afternoon, at the Pyne Colliery of the Philadelphia & Reading Company, at Swatara. The colliery had been idle for about two weeks, and these men, all old miners, entered a water-level drift for the purpose, it is supposed, of making some explorations, as accumulations of gas above water-level are almost unknown. They probably thought it unnecessary to take any precautions, and entered an abandoned breast with their naked light. The breast, however, was full of gas, which was fired from one of their lamps, and exploded, knocking the men down, and covering them with coal and *débris* from the roof.

Utilization of Cinder.—For years, the cinder from puddling and heating furnaces was regarded as valueless, and its disposition was in many cases a very heavy item of expense. Around every old rolling-mill are huge piles of this material, amounting, in some cases, to thousands of tons, that have been regarded as worthless, and in many instances extensions of works have been made upon foundations of this cinder. Within a few years, however, it has become very valuable, especially in the West, as a mixture in blast-furnaces with rich Lake Superior ores. It nearly always contains over fifty per cent of metallic iron, and is a better material than a great deal of the ore that is used in many blast-furnaces. The old cinder banks are being quarried, and may become a mine of wealth.

Temperature Represented by Molecular Oscillations.—M. Raoul Pictet supposes that the temperature may be represented by the length of the calorific oscillation of the molecules of a body, and from this hypothesis he deduces the two following laws: (1.) The higher the melting-point of a solid, the shorter are the molecular oscillations. (2.) The products of the temperatures of fusion by the lengths of oscillation are constant for all solids. The laws are confirmed by all the metals of which the coefficients of dilation have been determined with sufficient accuracy. Similar relations hold good for the elements of volatile liquids, when they are compared at their boiling-points. These laws may be classed with the law of constancy between the products of atomic weights and specific heats.

Our Zinc Mines.—The Philadelphia *Ledger* says: "For more than thirty years, capitalists have been prospecting in Pennsylvania and New Jersey for mines of zinc. In all this time, we learn from one interested, only four have been discovered. One is at Bethlehem, Pa., owned by a Philadelphia company. The others are in Sussex County, New Jersey. The one at Franklin is owned by Moses Taylor, of New York; the second, at Ogdensburg, is the property of a New York company; the third is a newly-found mine that belongs to William A. Bryan, of Newark, N. J. This last is undeveloped, but those who have examined it pronounce it one of the most valuable zinc deposits in the country. The revenue from each of the developed mines is very large. The zinc mill of the Lehigh Zinc Works, South Bethlehem, Pa., started up on the 20th of September, with a full complement of hands, after a stoppage of almost two years."

Nickel in Norway.—The production of nickel in Norway has become an industry of much importance during the past few years. In 1846, an English company opened the first mine, in the valley of Espedal, in the mountain district of Söndre-Gudbrandsdal; but this was closed in 1857, on account of the difficulty of approach and the lack of communications. Subsequently, mines were opened at Ringerike and Bamble, near Skien. During the years from 1861 to 1865, eleven nickel mines were worked, averaging 3450 tons a year. In 1865, the production from fourteen mines was 5200 tons, and gradually increased until 1875, when it reached its maximum, 34,550 tons. The larger part of this yield is exported as ore. Norway supplies fully one third of the yield of the world. Part of the ore is smelted near the mines; between 1871 and 1875, the yearly product was 110,500 kilograms. About 465 workmen are employed in mining, although, owing to the diminished demand, the number has decreased somewhat during the last year or two.

Protection from Heat in Rolling-Mills.—The intense heat to which "boilers" are subject in rolling-mills, while puddling their heats, is well known, and is generally urged as one claim for extra high wages. The manager of the Sligo Iron Mills, Pittsburg, has just patented an improvement to rolling-mill furnaces by which heaters and puddlers are protected from the fierce heat—and, no doubt, also from the intense glare of the molten metal—of the furnaces. It consists of a hollow iron shield, through which a stream of cold water is kept constantly running, suspended in front of the furnace in such a manner that it does not, in any way, interfere with operations while the furnace is being worked, and can be easily and quickly pushed aside when charging or drawing a heat. The water is introduced at the top of the shield, and, after running through it and performing its cooling mission, is drawn off by a pipe leading into the bosh, thus making the same water answer a double purpose. The utility of this invention will be readily understood when it is stated that the outside of the shield, being always at the same temperature as the water passing through it, not only protects the men from the glaring heat of the furnace, but cools off the surrounding atmosphere, and enables them to get out their full number of heats, even in the hottest weather.

USE OF ENDLESS ROPES FOR COLLIERY WINDING.*

By L. Trasenster.

For colliery winding, the use of endless ropes, of uniform section and therefore perfectly balanced, has been practically carried out at two pits of the Hannover colliery, near Bochum, in Westphalia, by the manager, Herr Koepe; and has since been adopted at the colleries of Westhausen, and Oberhausen in Westphalia, and at that of Myslowitz in Silesia. The ordinary rope-rolls or drums of the winding engines are replaced by a single large driving-pulley, round which the endless rope makes from half to three quarters of a turn, and thence passes over a pair of guide-sheaves in the pit-head frame, and down the two divisions of the winding-shaft, turning at the bottom without any sheave.

At No. 1 pit of the Hannover colliery, where this plan has been in operation since September, 1877, the fly-wheel of the old winding engine is employed as the driving-pulley, its circumference being covered with a grooved rim of wood; it is 24 feet in diameter, and is situated at one side of the pit-mouth, the rope making rather more than half a turn round it. It winds from a depth of 256 yards, by double-decked cages, each weighing 44 cwt., and carrying four tubs, which weigh 24 cwt. together and contain 2 tons of coal; the speed is from 30 to 33 feet per second, or 20 to 22 miles per hour, and about 700 tons of coal are raised in eight hours. The rope is round, made of steel, its diameter being 1·57 inches; it weighs 11 lbs. per yard, or about 25 cwt. for the 256 yards. The load on the ascending rope at the pit-mouth is, therefore, rope 25 + cage 44 + tubs 24 + coal 40 = 133 cwt. total; while that on the descending rope is the same less the coal, or 93 cwt. total.

* Abstract of a paper in *Revue universelle des Mines*, vol. v., 1879, p. 85. From the Proceedings of the Institution of Civil Engineers of London, edited by James Forrest, Secretary.

Driving Adhesion of the Rope.—Without any jamming of the rope in the groove of the driving-pulley, and assuming no more than exactly half a turn of the rope round the pulley, calculation shows that, even if the coefficient of adhesion between the steel rope and the wood rim, when served with stiff grease, be taken as low as 25 per cent, the load of 93 cwt. on the descending side would admit of as much as 204 cwt. on the ascending side without slipping; the available excess of 73 cwt. over the actual ascending load of 133 cwt. would be much beyond the extra starting force required for overcoming the inertia of the two loads. The coefficient, which in practice may rise as high as 40 per cent or more, is taken by Herr Koepe at 30 per cent: this admits of a load of 238 cwt. on the ascending rope, giving an available excess of 105 cwt. over the actual ascending load.

Conversely, however, in order to maintain the requisite adhesion for raising the actual load of 133 cwt., the tension on the descending side of the rope must never fall below 52 cwt. with the coefficient of 30 per cent, or 38 cwt. with a coefficient of 40 per cent. But as soon as the descending cage reaches the pit-bottom and rests on the fans or stops, the tension on the descending side is reduced to the weight of the rope alone, or 25 cwt. only. The length of the rope has therefore to be adjusted with such precision, by means of a tightening screw at each end, that the descending cage shall not touch the bottom stops a moment sooner than the loaded cage reaches the pit-mouth. Furthermore, as the ascending cage has to be raised a short distance past the fans or stops at the pit-mouth and then to be lowered upon them, the connection of the rope to each cage is made by means of strong springs, which also serve to throw the safety-catches into action in the event of the rope breaking. The intervention of these springs allows the loaded cage to pass above the top stops to the extent of 12 inches; and, in conjunction with the readier handing of the engine at the end of the run, enables both cages to be safely landed on the top and bottom stops. As soon as one deck has been unloaded at the pit-mouth and loaded at the bottom, the two cages balance each other, and can be further handed with ease.

Uniformity of Section of the Endless Rope.—This would present a serious and sometimes insurmountable obstacle to the use of hemp ropes for winding from great depths, owing to the excessive weight of the ropes themselves, but is an objection of little importance against steel ropes. A well-made rope of selected steel wire will safely carry, in working, a load equal to 2000 times its own weight per lineal yard; at the Westhausen colliery, the actual load is 1800 times the rope's weight per yard, and 1700 times at No. 2 pit of the Hannover colliery. Assuming a depth of 660 yards, a steel rope of uniform section will safely carry at the pit-bottom a load of 2000—660 = 1340 times its weight per yard; and assuming an actual load of 5 tons, the weight of the rope must be 8·36 lbs. per yard, or 49 cwt. for the 660 yards depth. In the opposite extreme case of the lightest steel rope theoretically possible, in which the transverse section should vary so that the strain per square inch should be equal throughout the entire depth, the total weight of the rope would be 39 cwt. as determined by a logarithmic equation somewhat similar to that which gives the adhesion of the rope round the winding-pulley. On the other hand, a hemp rope of uniform section for the same depth and load would weigh 295 or 147 cwt. total, according as its safe working strength be taken as respectively 900 or 1100 times its own weight per yard run; while the corresponding weight of the theoretically lightest hemp rope would be 110 or 81 cwt. total, respectively. Thus, for a depth of 660 yards, the total weight of the heaviest steel rope would amount to only five eighths of that of the theoretically lightest hemp rope.

Advantages and Disadvantages of the Endless Rope.—The advantages of this plan of winding are: (1.) The rope being perfectly balanced, the load against the engine is independent of the depth of the pit, and is constant throughout each run; the engine can accordingly be worked with a constant cut-off. (2.) The speed of the cages is uniform, and can thus be much above the mean speed attainable with rolls or drums of varying radius. (3.) The driving-pulley can readily be made of large diameter, thereby prolonging the life of the rope. (4.) Round wire ropes can be used, and the conditions are favorable for their working; while the driving-pulleys occupy little room and are not costly. (5.) In passing round the driving-pulley, the rope undergoes no shifting sideways, such as occurs with conical or flat winding-drums. The driving-pulley can accordingly be placed directly over the pit-mouth, as has been done last year at No. 2 pit of the Hannover colliery, where the winding-engine is placed on the heapstead, the whole being substantially housed in. The diameter of the driving-pulley is here 18½ feet, and the rope of 1·57 inches diameter passes around three quarters of its circumference; each cage weighs 3 tons, and raises 3 tons of coal in six tubs weighing together 1½ tons; the depth of the pit is 203 yards. (6.) As the loaded cage can not be raised above the pit-mouth, all risk of over-winding is avoided. (7.) The cage at the pit-bottom is handed by the engine with as much accuracy as the top cage. (8.) The cages, being steadied by the tail-rope, run more smoothly on the guides.

The disadvantages of the endless winding rope are: (1.) Should the rope break, both of the cages and both parts of the rope fall to the pit-bottom; and an auxiliary winding engine or steam capstan is required for rescue, as well as for repairs in the winding shaft, and for putting the new winding rope over the driving-pulley. (2.) The ropes must be of uniform section throughout, and therefore heavier than tapering ropes. (3.) The tail-rope hanging below the cages involves the expense of looking after it and keeping it in order. (4.) The winding-rope must be adjusted exactly to the proper length, and kept taut by springs during the loading and unloading of the cages. (5.) There is no means of working with one cage alone, whenever either division of the winding shaft is stopped for repairs, or otherwise obstructed. (6.) The engine can not wind from two different depths, nor can it be used for raising water by means of tanks dipping into the sump. (7.) The point of bending over the pit-head sheaves at the moment of starting can not be shifted to a different portion of the rope's length, as is done with the ordinary single ropes by periodically taking them up at the ends for a short length.

Safety Ropes.—As a precaution against accident from breakage of the endless winding rope, especially where used also for raising and lowering the men, Herr Koepe proposes attaching to the cages a pair of safety ropes, one on each side of the main rope, passing over a pair of pit-head pulleys upon a shaft, the bearings of which should be supported on strong buffer-springs; so that, if the main rope broke, the load, coming on these pulleys, should depress them until their rims bore against timbers underneath, which would act as brakes. A preferable plan would be to have alongside the original winding rope a duplicate, less tightly strained, which in case of accident should enable the two cages to be safely landed at top and bottom. In either case, the weight of the tail rope hanging below the cages would have to be equally increased; and the old winding ropes can be used for this purpose.

The endless-rope system has already been working extensively for haulage purposes on inclines and levels, as well as for hoists or elevators; and its several advantages and disadvantages for winding in shafts have to be weighed against one another according to the circumstances of individual pits. Thus far, the experience obtained in Germany has been satisfactory; and the plan can be readily tried at any colliery having a separate shaft for the men, which would be available as a reserve winding shaft in any emergency.

GENERAL MINING NEWS.

CALIFORNIA.

The Mammoth Company, of Lake District, Mono County, has a forty-stamp mill, and the most complete buildings and accessories for mining and reducing ores, erected at an outlay of $300,000. The company evidently has unlimited capital behind it, and is working to secure all of the valuable mines in the locality before making much of a showing. The mills are kept running on some low-grade ore, while a ledge of very valuable rock carrying free gold is passed by for the time. A ledge recently discovered in the vicinity was bonded to an ostensible representative of the Bank of California for $10,000, and purchased a few days afterward when the fact developed that the Mammoth Company had taken it in. The ledges are located on the side of a mountain overlooking Mammoth City and the reducing works, and the rock is run down on tramways. Another mill is shortly to be erected at Mammoth or vicinity, and is to be known as the Headlight and Monte Cristo Works. A company has been organized to tunnel and bore into the side of the mountain for the purpose of striking the Mammoth vein beyond the claim of the company now holding it. Two or three tunnels have been run in to the depth of a hundred feet or more.

The Unworked Gold-Fields of California.—The Grass Valley *Union* says: "For hundreds of miles along the western base of the Sierras, are gold-bearing veins and placers awaiting development that will yield a profitable return to the energy and money of the capitalists who will yet seek this field as one of the best and most reliable to be found on the globe. Here will be found every facility of a kindly climate, accessibility, cheap and available power, and every concomitant that can make the business profitable above the cost of production. The gold mines of California, notwithstanding the vast treasures they have given to the world, are comparatively unworked fields. The gold-bearing veins are practically without limit, and the Dead River channels are only beginning to yield their inexhaustible stores. This is not an overdrawn estimate of the gold-fields of California, and far-seeing men are beginning to realize the importance of giving more attention to them as a source that will be lasting and reliable in keeping up an equable production of the metal that is preëminently the need wherever the wheels of industry are in motion or commerce spreads its sails."

The mill of the Placerville Gold Quartz mine, situated within the limits of Placerville, is crushing 20 tons of quartz each day, and has developed a new ore-body.

The Deadwood Mine.—The Nevada *Transcript* has the following in regard to this mine, situated near Nevada City: "The Deadwood mine continues to pan out well. A 276-ounce bar, worth in the neighborhood of $5000 and representing the free gold from 125 tons of ore from the 160-foot level of that claim, was taken to the Citizens' Bank. Besides this bar, the quartz produced 10 tons of sulphurets worth about $100 per ton. Six thousand dollars' worth of gold and sulphurets has been extracted in the last two weeks. The level referred to has yielded $50,000 since being opened."

We condense the following from the *Standard* of the 4th inst.:

Boston Consolidated and Last Chance.—A contract has been awarded to sink down to the 200-foot level—110 feet below its present depth—at $6.50 per foot. Vein in this mine is divided by a horse, exposing a stratum of about 3 feet in width, following the foot-wall. First-class milling ore has accumulated on the dump.

Bulwer.—The cross-cut from the south drift, 380-foot level, of this mine is in 76 feet. No changes in formation.

Dudley.—Active work is going forward in this mine. The shaft is down 20 feet below the 400 level, and is being rapidly sunk, in order to reach the 500 level, when cross-cutting will be commenced simultaneously on both levels.

Noonday and North Noonday.—The combination shaft in these mines is down 350 feet, and is being rapidly sunk.

Standard Consolidated.—We are in receipt of the superintendent's letter of date of October 5th, from which we make the following extracts:

"The Worth drift, 385-foot level, is in from the main east cross-cut 407 feet; the ledge here is 6 feet wide, and continues to look well. The west cross-cut from this drift is in 63 feet, with no particular change to note, in the character of the formation passed through, since last report. The south drift is in 55 feet; the ledge is 4½ feet wide, of very fine ore. The south drift, 550-foot level, is in from the winze a distance of 133 feet, showing a ledge 6 feet wide of good ore. The west cross-out, 300-foot level (incline), is in 101 feet; we expect to make a connection between this cross-cut and the upraise from the 385-foot level in a few days. The West Standard is looking as well as usual; the ledge is broken into three different seams, making about 11 feet of ore, which is very rich. On the 550-foot level, we are stoping. South of the 'incline,' the ledge is from 6 to 8 feet wide, of good ore. The ledge in the Gildea stopes (450-foot level, incline), is 4 feet wide, of good milling ore. The stopes, 385-foot level, main shaft, are looking exceedingly well; the ledge is about 12 feet wide, of very fine ore."

Tioga.—The main shaft of this mine has reached a depth of 625 feet, and is now in hard blasting rock; good progress is made. Five out of the nine men precipitated into the shaft recently, through imperfect machinery, are now dead, and three others are not expected to live. This accident has cast a gloom over the whole camp.

CANADA.

The Algoma *Pioneer* says:

"A good deposit of sulphate of copper has been discovered near Echo Lake, Ontario. The opened vein is reported to be over ten feet wide and very rich.

"The Prenzlauer silver lead mine is being vigorously developed. This mine is in range with the Victoria silver mine, and good results are expected.

"The Cozens silver lead mine is reported every day as getting better.

"The Victoria silver mine is becoming a settled thing.

"Gold has been discovered in paying quantities in this section.

"Work on the silver mine of Messrs. Trempe and Brown is being pushed with vigor.

"All the above mines are within 20 miles of the Sault, and some of them are but five or six miles out."

DAKOTA.

The Black Hills.—The Central City *Herald* of October 4th says:

"Bald Mountain is bound to advertise herself, in one way or another, every

month. First it was gold; then, after a short interval, silver carbonates; and now, its placers just below the Elkhorn mine. The 'color' was first discovered by a miner by the name of Watson, who, out of curiosity, pounded out some barren-looking gray earth and gravel, and was astonished to find about ten cents in the first pan. He kept on pounding, and took out from five cents up as high as fifteen. The gold is fine and very clean, and is yellower than Deadwood gold. A drain ditch is already being run, and about forty claims are staked off down the creek. Quite a number of Centralites have secured claims.

"There are, in the mills of Central, Golden, and South Bend, 370 stamps in active operation at the present time. Besides this, there are 150 stamps at Terraville and about 50 in Blacktail Gulch that work steadily, all of which are tributary to Central. There are less than 100 stamps idle in Central, and but about 50 more in the tributary gulches, some of which will begin crushing ore at an early day.

"The Old Lexington mine, on Spruce Gulch, has been stocked, and a 60-stamp mill will soon be erected on the property."

Carbonate Mine.—The *New Mexican* says of this mine: "The shaft upon this mine, which is located at Los Cerrillos, is down one hundred and forty feet, and the vein is widening very much as depth increases. The latest assays give one hundred and seventy-five ounces of silver per ton."

The Cerrillos *Prospector* says: "The mines are improving every day. The latest assays of the Oread give 305 ounces to the ton. The Condor is 20 feet deep. F. L. Alden has a rich find of blue chlorides of silver, the first one of the kind in this camp. The Red Jacket lode, belonging to the Essex Coöperative Mining Association, has a two-foot crevice, with a 22-inch pay-streak; it appears to carry a large quantity of native silver; this is the best mine in the northern part of this district. The Ursula and the Clifton are late discoveries."

MEXICO.

THE SIERRA MOJADA MINES.

Recent Texas advices represent that the new Mojada silver mines, which Mexico appears so anxious to guard against Yankee invasion, are situated near the Dewy Mountains, at a point where the Chihuahua, Coal, Mila, and Durango meet, about 200 miles beyond the Rio Grande. San Antonio papers say that in one of the mines the average yield of the bullion which is said to contain gold is 40 marcs, or 320 ounces per cargo of 300 pounds. Many merchants from the cities of Saltillo, Zacatecas, Monterey, and other places have gone or have sent agents to the place. The *Two Republics*, published at the City of Mexico, of September 15th, says: "The immense riches discovered in the Mojada Mountains open up a magnificent field for remunerative enterprise. Already we hear of a number of people flocking from the adjoining States, and from the north side of the Rio Grande." The Texas *Express* says: "Klorenzo Castro has received a letter from a friend in Mexico, describing the Sierra Mojada mines. The ore so far discovered yields from 10 to 100 marcs to the ton. Leadville and Comstock ores are nowhere in comparison." A marc is eight ounces.

The intention of the Mexican government to assume control of these deposits serves to confirm the report that a rich mineral district has been discovered there. The contemplated scheme may also be connected with the fear expressed by the Mexican journals that a rush to the mines from Texas will create a spirit of territorial annexation. As the district is within only 200 miles of the frontier, some Texans may desire to see it and the intervening territory added to their State; but if they acquire protection and comfort under the Mexican flag, they are not likely to abandon mining in order to engage in filibustering schemes.

Washington, Oct. 13.—Mr. Sutton, United States Consul at Matamoros, in his dispatch to the Department of State, dated September 27th, gives some information concerning the newly-discovered silver and gold mines in Mexico. These marvelously rich mines are in the Sierra Mojada range, about 600 miles west of Matamoros, and are very inaccessible. The great distance, the terrible roads, and danger from the Indians in the mountains, make it a hazardous journey to reach them. The chances of getting the money there, and of getting it out of the country are, of course, very doubtful. The advice of the consul is to wait six months before attempting to go to the mines. By that time, some definite knowledge on the subject will be obtained.

A dispatch dated City of Mexico, October 5th says: "Congress, in secret session, erected parts of the States of Chihuahua, Durango, and Coahuila, including the entire mining district of the Sierra Mojada, into a federal territory, remaining under the jurisdiction of the federal government until the question of boundaries shall have been settled by the three States. Some of the newspapers allege that this act is unconstitutional; but it appears to be the only remedy to preserve order and prevent conflicts of the local authorities."

MICHIGAN.

The Boston *Commercial Bulletin* says:

"In reference to the new discoveries of silver on the main land near Silver Islet, recently reported, it is now said that reliable workings in the neighborhood of Thunder Bay have been purchased by Nevada and Colorado miners. Four seams of ore, carrying both gold and silver, have been struck in the Northern Light District. McKellar's Island is found to contain silver spar very rich. Explorations recently made on Black Bay were attended with success. Commercially the mining business can be more cheaply conducted on Lake Superior than is generally supposed. Wages are low, and the cost of transportation by continuous water-way to Swansea, Wales, where the best results are given, is less than the percentage lost by sale to smelters, as in Nevada and Colorado."

MONTANA.

The Mines of Phillipsburg.—We are indebted to the New York *Tribune* of the 16th inst., for the following extracts, which we take from a letter written by its staff correspondent, Mr. Z. L. White, from Phillipsburg, under date of September 25th:

"The Hope mine is an irregular vein, lying between strata of limestone. The formation dips into the hill at an angle of about 45°, and the deposit of ore lies entirely above water. Although it originally contained sulphur in large quantities, it has become decomposed, and is now free milling. The richest ores found are sulphurets of silver. I suppose that the deposits in the mine, like nearly all others found in limestone, occur in pockets or chambers, and that when one of these has been worked out there is very little to guide the miner in his search for another. At the same time, the fact remains that ore enough has been taken out of the mine to keep a 20-stamp mill in operation most of the time for the last ten years; and it is the belief of gentlemen in Montana familiar with its history, who have been interested in its success, that it would have paid a fair profit on the money invested in it but for the ignorance or incompetence of some of its superintendents, the extravagance of others, and the attempt at various times of a board of directors in St. Louis—a majority of whom never saw the property, or have had no practical experience in mining—to decide questions which only a superintendent who is on the ground can be competent to decide. One thing is certain, the Hope mine and mill have not been remunerative property to their owners. Their future depends upon the amount of ore in the mine, of which I know nothing, and the wisdom, skill, and purpose of its managers. If the mine is operated with the purpose of enabling a few men to make money by buying and selling the stock of the company, it will never pay regular dividends, no matter how favorable all other conditions may be.

"The Speckled Trout and the Algonquin are the two principal mines on South Mountain. The former is owned by the Northwestern Company; and the Algonquin is owned by a company of the same name. The first of these mines was developed about five years ago, and a good ten-stamp mill was erected in 1875 to reduce the ore taken from it. The main shaft of the mine started at the surface in a chimney of very rich ore, which may have been 15 feet wide and 6 or 7 feet thick. This chute dipped into the hill at an angle of about 70° with the horizon, so that the farther the perpendicular tunnel was sunk, the longer was the level that had to be driven to reach it. There is other ore in the mine; but it is found in such small quantities, is of so low grade, and so base, that I doubt if it has ever paid for working. When the mine was apparently in a good paying condition, it was sold to some Philadelphia capitalists at an extravagant price (I believe it was between $150,000 and $200,000), and a considerable part of this purchase-money was left as a lien on the property. Since the purchase, the mine has been operated under various arrangements, which it is neither possible nor necessary for me to explain, and with several changes of superintendents. One year, I believe, its earnings were considerably greater than its expenses; but, on the whole, it has been a costly enterprise to those who have invested money in it. Just now, I am told, the debts of the company are in the neighborhood of $260,000, $143,000 of which is secured by a mortgage to Mr. Charlemagne Tower, of Philadelphia, the president of the company. To the workmen employed are due $28,000, and the question now to be solved is whether, during the coming winter, the mine can be made to produce enough to pay off this sum, and to make a beginning upon the debt secured by the mortgage.

"The Northwestern Company has failed, as nearly as I can learn, first, because the property was purchased for much more than it was worth; secondly, because the body of paying ore in the mine was limited in extent, and the cost of reaching it increased very rapidly as the workings were pushed down; and lastly, because its management has, for the most part, been in the hands of men who were neither competent miners nor men of good executive ability. As I have already said, the best ore in the mine has been found in a single chimney. The main shaft is now down 400 feet; and, in a hasty run through the underground workings, I was impressed with the fact that an enormous amount of dead or unproductive work had been done. The concern is now so deeply involved that I see no solution of its troubles except in bankruptcy. If a new company could take the mine at a reasonable cost and operate it intelligently and economically, it might yet be made a successful enterprise. The actual product of the mine has already been large, and the ore, though base, is reduced without unusual difficulty. Its yield has been from 40 to 100 ounces of silver to a ton.

"The Algonquin Mine has, during the last two years, been opened up near by on the same mountain, and exposed bodies of ore of sufficient extent and richness as, in the opinion of Mr. J. K. Pardee and in that of the Philadelphia capitalists who back him, to warrant the erection of one of the best twenty-stamp mills in the country. The valuable ore in the Algonquin mine, like that in the Speckled Trout, is found in chimneys through the granite, of which there is a succession in the former. The ore is somewhat base, containing some galena mixed with sulphurets and other combinations of silver, and has to be roasted and chloridized before it can be amalgamated. It will probably average from 75 to 90 ounces of silver to a ton. For this work the Algonquin mill will have improved Howell furnaces and every facility which experience has suggested for the rapid and economical reduction of the ores. Besides the Algonquin mine, which of itself will probably supply the mill, the company has several other mines, which, though not much developed, are very promising in their appearance. With his experience in Phillipsburg, and the lesson of the failures of the other two companies before him, Mr. Pardee ought to avoid the rocks on which they split, and will, I have no doubt, make his new enterprise a success. The president of the company is Mr. H. A. Stiles, of Philadelphia.

"There are no very promising openings for new mining enterprises in or near this camp. The district is not a large one, and it has been the policy of the existing companies, and especially of the Algonquin, to purchase all the new mines that are discovered. The three mills already established will probably be able to take care of all the ores that the mines will yield for many years to come. Investors, unless they desire to purchase interests in the present companies, will not probably find here any very tempting opportunities to use their capital. At the same time, I believe that the camp will grow in importance and that in the near future its output of bullion will be great."

NEW MEXICO.

THE COPPERVILLE MINES.

A correspondent of the Pueblo (Colo.) *Chieftain*, under date of September 29th, writes as follows: "The De Soto lode is 40 feet deep; the vein is from 2½ to 3 feet wide, which is black oxide of copper, carrying, as assays show, from 20 to 300 ounces of silver, and from 1 to 3 ounces of gold. The Kit Carson lode is 17 feet down; it assayed 2 ounces silver and 18 per cent copper on top, and has increased something over $1 per foot at its present depth. The Montezuma is about 35 feet deep, and has a crevice 2½ feet wide, with about 6 inches of brittle silver, oxide of copper and free gold running along on the foot-wall. The Ruby Silver lode is 58 feet deep, crevice from 3 to 6 feet, and assays from $50 to $250; some ore has been shipped, but I have not learnt the amount of the returns. The Orange West has a solid vein of black oxide of copper, carrying silver about 3 feet wide. The Missouri lode is about 35 feet deep; the top assays $100; the vein has increased from 6 inches at the top to about 2 feet wide of oxide of copper, all colors of the rainbow."

NEVADA.

The Tuscarora District.—The news from these mines for the week ending the 4th inst. is as follows: The Belle Isle stopes are looking well, and producing as usual. The Grand Prize will stop milling for the present, as there is not enough ore to supply the mill. Will make final clean-up about Sunday. The ledge in the 400 level of the Argenta is of fair size, and contains good ore. Expect to cut a body of ore at twenty feet from winze that exists in the 400 level near that point. Every thing working satisfactorily in and about the mine. There is quite an improvement in the stopes above the 700 level of the Leopard (Cornucopia). There is also good ore below that level. Work has been commenced on a new claim—the Orizaba—in Centennial District, and another about a mile northwest of the Navajo, which is called Bullion Hill. At the Independence, the vein on the 400 level continues strong, but the ore is low grade. The stopes are not yielding sufficient ore to keep the mill supplied.

The Hillside Mine.—The Eureka *Leader* says of this mine: "The company has in its employ something over 275 men; a working force of 75 men under ground, 50 at the reduction works, 40 hauling ore, wood, and coal, 90 coal-burners and wood-choppers, and about 20 engaged in other occupations.

"The furnace has been in full blast ever since the 10th of July, turning out a large amount of bullion—on an average $2200 a day. There are at present 120 tons on the dump, representing an aggregate value of over $56,000. The bullion is transported to the Utah & Southern Railroad, whence it is sent East for refining. It has lately been gaining on the teams, but now it is shipped in large quantities, as much as 40,000 lbs. being taken away per day.

"The Hillside, ever since its discovery, some sixteen months ago, has been in the hands of the Hillside Mill and Mining Company, of San Francisco. It first attracted notice in San Francisco, in August, a year ago, where in the stock market it sold as high as $800,000, and it was then that the offer of $500,000 for the mine was refused. The furnace not running up to expectation, the stock declined, and the impression was prevalent that the ore could not be worked. Then it was that M. D. Howell took control of the mine, and under his able management soon had every thing in splendid working order, making the long run of forty-eight days, and turning out over $882,000 worth of bullion. The next run through was a surprise, he running up to ninety days, and shutting down only on account of coal, turning out bullion to the amount of $170,000; the sum total for the two runs amounting to over $250,000—the value of the lead not considered."

The Inca Mine.—This mine is located in the Tem Pahute District. The *Evening Mail* says: "A shaft is down 350 feet, and considerable quantities of good ore were taken out in the sinking. The ledge was found to be about five feet in

width, showing good ore. Shipments made to the Reveille mill have given the following results: First-grade ore, $750; second class, $425; and third class, $270. The estimated cost of working, with the necessary machinery on the ground, will not be more than $12 per ton."

THE WHITE PINE DISTRICT.—Work on the mines of the Sweetwater is progressing nicely. Operations on the Central Treasure, situated on Treasure Hill, between the Pocatillo and Ward Beecher mines, have been resumed. The Safford is showing well, and will soon ship more bullion. The Imperial, Western Central, and Ohio are being worked with satisfactory results. Ore has been shipped to Eureka which assayed $80 per ton. Norfolk is improving. The Magnet is still in rich rock.

THE COMSTOCK.

We condense from the Gold Hill *News* of October 8th as under:

"At the Sierra Nevada, the water has been pumped from the incline till the 2300-level has been freed and is still going down, the C. & C. pumps handling readily all that has been sent to them, giving no occasion to use the Ophir's bailing apparatus. By another week, the whole accumulation in the incline will be drawn off and the workings ready for a resumption of operations.

"At the Union, every thing is prosperous. The 2400 level drift south and west from the Sierra Nevada incline and running under the shaft will be started to-morrow, and the diamond-drill hole will be followed to develop the ore-body there encountered. The situation at this point is probably the one of commanding interest at the north end. The Union shaft is continued on down, the bottom still in ore giving good assays. It will reach the 2400 level before the end of the month.

"The situation in Ophir and Mexican is increasing in importance all the time. The east drift on the 2100 level is in ore. The value of the strike has not been determined, but will be in a few days, when the cross-cut will either have developed an ore-body or will have demonstrated the strike to be either the Hardy vein or a stringer from it. The probabilities are, in view of the situation, that it is the Hardy vein which has been encountered. But in that case the strike is of considerable consequence, as it gives 200 feet more in depth of that valuable stringer of ore, and at the same time affords increased indications of the strength and value of the formation from which that feeder proceeds and which is bound to be discovered sooner or later. The Hardy vein is very rich. The main body should be richer.

"Another important point is the joint connection between the 2100 and 2300 levels of the Ophir and Mexican mines, which will be made this week. The cross-cut west, which will then be run, is most important, as streaks of ore have been encountered both in the joint winze from the 2100 level and also in the joint cross-cut west on the 2000 level.

"The Ophir incline and the cross-cut west on the 2400 level are still interesting. But the main point of interest now lies ahead of the face of the cross-cut.

"The Savage has now such control of its water that it can dispose of it as it pleases, and will do so in a very short time, and dispose of its terrible heat also.

"In Julia, matters are reaching an interesting point, and the day of its deliverance is at hand. It will soon be drained and thoroughly ventilated.

"Workings in the Divide mines are increasing in importance, especially the Bullion winze, which is improving all the time, and the cross-cuts in Exchequer and Consolidated Imperial.

"Drilling in Crown Point is nearing its point of chief interest. Aside from this and the work of prospecting the 1850 level of the Alta and Benton, and on the 1300 level of the Silver Hill, the situation to the south is comparatively unchanged.

"Three new prospecting drifts have been started from the Sutro Tunnel. Ore assaying $34 per ton has been encountered."

WAGES PAYMENTS ON THE COMSTOCK FOR SEPTEMBER, 1879.—The disbursements for labor on the September account by leading Comstock mining companies are as follows:

Hale & Norcross	$8,958.50
Union Consolidated	7,600.00
Ophir	47,000.00
Savage	12,644.99
Chollar-Norcross-Savage shaft	9,976.21
Chollar	154.60
Potosi	154.00
Bullion	8,750.00
Exchequer	250.00
Andes	1,500.00
Gould & Curry, Best & Belcher, and Joint Shaft	18,936.75
Overman	6,902.00
Caledonia	3,131.50
Forman shaft	13,799.33
North Bonanza and Flowery	9,787 00
Sierra Nevada	10,000.00
Consolidated Virginia, California, and C. & C. shaft	46,792.50
Union shaft	26,676.75
Utah	5,431.50
Occidental	996.00
Lady Bryan	7,000.00
Mexican	4,350.00
Belcher	4,888.75
Belcher air-shaft	6,193.75
Yellow Jacket	16,882.75
Alta	7,284.75
Benton	5,500.00
Lady Washington	1,941.00
Sutro Tunnel Co.	15,000.00
Total	$293,482.03

UTAH.

THE MINES OF LITTLE COTTONWOOD.—The *Herald* of October 10th says: "Five hundred men are now working in this district.

"The Toledo has shipped large quantities of ore this season, running from 150 to 200 ounces in silver to the ton. The compresser, which runs the machinery of the mine, is situated in the bottom of the cañon, while the mine is on an almost perpendicular cliff near the top of the mountain.

"The Manitoba (west of the Toledo) ore is of the same character as the Toledo, but not of such high grade. The No You Don't, also east of the Toledo, is the property of the same parties that own the Manitoba. The Yankee Blade and Rough and Ready are said to be excellent properties. Also the famous Flagstaff, the Pride of America, the Star and Titus, the latter mine not being worked at present.

The Vallejo, now known as the Joab Lawrence, is turning out large quantities of high-grade ore and is steadily improving. It employs upward of thirty men, running day and night.

The Burgess tunnel is now in a distance of 500 feet, the object being to connect with the lower workings of the Joab Lawrence. It is also believed to be the intention of this company to run a drift from this tunnel to connect with the North Star. These mines, together with others, constitute what is known as the Alta Consolidated.

"The Vallejo tramway is employed for the transportation of ore by the Joab Lawrence, and extends from the mine to Alta, the distance being about 4000 feet.

"The renowned Emma mine appears to be endeavoring to redeem herself, and is becoming quite respected in this neighborhood. Extensive preparations are making to connect the Bay City tunnel with the lower workings of the Emma, and the chances are that we may hear favorably from her ere long. Such is the hope of all.

"Hoosier Lake is the name of a new mining district in Iron County. The first ore from this region was found three years ago, and assayed $900 per ton. Within the last month, some veins and deposits have been found and located near Panguitch, Fish Lake, and other places. The ores found are gold, silver, and copper, and are considered first-class. The formation of the country rock is granite, quartz, and porphyry. The ledges or veins and deposits thus far prospected are from two to twelve feet in width, carrying all the colors of chloride, ruby, and horn-silver.

"The Pleasant Valley Railroad is built a distance of fifty-five miles from Springville, and may now be said to be in the heart of the great coal-fields of San Pete. It will probably be extended from Springville to Provo this fall."

WYOMING.

The Gold Hill (Nev.) *News*, under date of Seattle, October 9th, says: "N. E. Goodell arrived here yesterday, bringing with him 18 ounces of coarse gold from the Skagit mines. He states that there are now 30 men in the diggings on Ruby Creek, who recently struck it rich, and have taken out from $5 to $12 per day to the man. The mines were discovered last fall. Flattering prospects have also been found at several other points along Ruby and Cañon Creeks, and a big rush for the mines is likely to set in."

FORT MCKINNEY, WY. T., Oct. 14.—Great excitement prevails in this vicinity on account of the recent rich discoveries of gold-bearing quartz in the Big Horn Mountains, about 75 miles northwest of this post, at the head of the Tongue River. Large numbers of miners are passing through this place on their way to the mines. Nearly all the citizens of this section are leaving for the mountains. Ore has been assayed, with the following results: Lowest, $4; highest, $70 per ton.

NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus, and the treating of Precious Metals, etc., from *The Official Gazette of the United States Patent Office*, for the week ending October 7th, 1879:

No. of Patent.	*Title of Invention.*	*Name of Inventor.*	*Residence.*
220,212	Water-Wheel	David H. Anderson (a)	San Francisco, Cal.
220,213	Brick-Kiln	Daniel Asbury (b)	Charlotte, N. C.
220,215	Pulley-Fastener	Ed W. Blackhall (c)	Toronto, Ont.
220,239	Roll for Reducing Railway-Rails	Charles Hewitt	Trenton, N. J.
220,240	" " " "	" "	" "
220,246	Rotary Engine	Boldamer E. Letang	San Leandro, Cal.
220,248	Carbon Points for Electric Light	Charles H. Manning	Washington, D. C.
220,262	Low-Water Alarm for Steam-Boilers	John F. Thompson	Troy, N. Y.
220,269	Cover for Quadrants	Wash. H. Boyd (d)	Godfrey, Ill.
220,287	Regulator for Electric Lamps	Edwin J. Houston	Philadelphia, Pa.
220,292	Method of and Apparatus for Determining the Measure of Steam	Moses W. Kidder	Lincoln, Mass.
220,304	Explosive Compound	John Pattison	Nevada City, Cal.
220,309	Hot-Air Engine	Alexander K. Rider (e)	Walden, N. Y.
220,320	Steam-Engine	Richard Walton	Pittsburg, Pa.
220,321	Artificial Fuel	Ebenezer B. Warren	Philadelphia, Pa.
220,337	Lime and Cement Kiln	Calvin Brown	Mare Island, Cal.
220,350	Pump	John R. Cusbier	Bellport, N. Y.
220,381	Means for Accelerating the Draught of Boiler-Fires	John D. Imboden (f)	Richmond, Va.
220,387	Ventilating Apparatus for Mines	Joel Kay	Bodie, Cal.
220,394	Process for Preparing Paint from Coke	Henry Lempfert	Green Point, N. Y.
220,405	Platform-Scales	Frederick Meyer, Jr.	Newark, N. J.
220,424	Steam-Boiler Furnace	Edwin Reynolds	Milwaukee, Wis.
220,434	Ore-Roasting and Smelting Furnace	Lewis Schantl	Silverton, Colo.
220,439	Ditching-Machine	Guernsey Smith	Rochester, Ill.
220,449	Manufacture of Chloride of Zinc	William H. Wahl	Philadelphia, Pa.
220,451	Water-Tube Steam-Generator	Charles Ward	Charlestown, W. V.

(a) Assignor of one half of his right to Samuel K. Goldtrap, Centreville, Idaho.
(b) Assignor of one half of his right to Ebenezer Nye Hutchison.
(c) Assignor to Charles V. Kasson, Buffalo, N. Y.
(d) Assignor of one half of his right to John T. Garland, St. Louis, Mo.
(e) Assignor to Thomas J. Rider, same place.
(f) Assignor to himself and Henry B. Hays, Pittsburg, Pa.

A Year in the Patent-Office.—WASHINGTON, October 15.—A statement of the operations of the Patent-Office during the last fiscal year shows that during the twelve months ended June 30th last, 19,300 applications for patents were received, 2674 caveats were filed, 12,471 patents were issued, and 1547 trade-marks and labels registered. There were 828 patents granted but withheld for payment of final fees. The total receipts of the office were $703,146, being $154,495 in excess of its total expenditures.

The Reese Dephosphorizing Patents.—The Pittsburg *Telegraph* says: "Mr. Reese claims that the five cents per ton royalty is a small affair as compared with the benefits accruing from his process. His sale was to the Bessemer Steel Company of Philadelphia, an organization formed of all the Bessemer steel-makers in the country. The control of ten patents is included in this sale, these dating from 1864 to 1879. The production of Bessemer and open-hearth steel, affected by the Reese process, is about 700,000 tons per annum in the country, and will produce the inventor $30,000 per year royalty."

PROPOSALS.

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, the full name and address of parties soliciting, and the latest date at which they will be received:

Twenty Tons Good, Soft St. Louis Lead, and Erection of Pumping-Works at Water-Works, Pittsburg; William C. McCarthy, Comptroller	Oct. 19, 1879.
Improvement of Harbor at New Orleans, La.; C. W. Howell, Major of Engineers, P.O. Drawer 432, New Orleans, La.	" 20, "
Improving Pearl River, Mississippi, from Jackson to Carthage; C. W. Howell, Major of Engineers, U.S.A., P.O. Drawer 432, New Orleans, La.	" 20, "
Improvement of Savannah River, Georgia; Q. A. Gillmore, Lieutenant-Colonel, Engineers	" 20, "
Dike in Flushing Bay, New York; John Newton, Colonel, Engineers, Room 31, Army Building, corner Houston and Greene streets, New York	" 22, "
Quartermaster's Stores; James A. Ekin, Deputy Quartermaster-General, U.S.A., Jeffersonville Ind.	" 23, "
Sewers, Grading Streets in New York City; Department of Public Works, City Hall, New York	" 23, "
Hardware; James A. Ekin, Deputy Quartermaster-General, U.S.A., Jeffersonville, Ind.	" 23, "
Bridge over Jones's Falls, Baltimore, Md.; John E. Toole, Clerk to City Commissioner, Baltimore, Md.	Nov. 1, "
Bridge at Milwaukee, Wis.; H. J. Hilbert, Commissioner of Public Works, Milwaukee, Wis.	" 1, "
Improvement of the Harbor of Cedar Keys, Florida; A. N. Damrell, Captain, Corps of Engineers, Mobile, Ala.	" 5, "
State Buildings, Lincoln, Nebraska; F. M. Davis, William H. Wilcox, 71 Washington Street, Chicago, Ill.	" 6, "
Graving-Dock at Esquimalt Harbor, at Victoria, British Columbia; George A. Walkem, Chief Commissioner of Land and Works, Victoria, British Columbia	Dec. 27, "

The Board of Engineer Officers detailed by the Secretary of War, under an act of Congress, to inquire into and report upon the feasibility of bridging or tunneling the Detroit River, at Detroit, for railway purposes, have begun their deliberations there. It is believed that the local committee will bring strong pressure to bear in favor of a bridge.

FINANCIAL.

Gold and Silver Stocks.

NEW YORK, Friday Evening, Oct. 17, 1879.

The interest in mining stocks is growing, and we again record a very large business, pretty evenly distributed through the list. The old bonanzas—California and Consolidated Virginia—record sales aggregating 17,480 shares, with the prices at the close to-day, in sympathy with the San Francisco market, somewhat lower. This is a very large business for these stocks, and greatly in excess of that done in them on the Pacific Coast, where operators are more familiar with their merits and demerits, or, rather, have been oftener caught by the gambling cliques that control them.

Belle Isle figures very prominently in the dealings, the sales amounting to 5465 shares, and the final prices the best of the week. This stock is one of the most prominent on the San Francisco market. The mine is said to be a good one, and capable of yielding large amounts of bullion. It is a Tuscarora mine, however, and has characteristic Tuscarora management.

Hukill is fairly maintained, and an immense business has been done, the transactions amounting to 20,210 shares. Reliable advices from this mine state that it is now looking better than ever before.

Independence shows considerable activity, at steady prices. Leadville is quiet. Plumas is quiet and weak. The production of this mine is increasing and the outlook is favorable. The contemplated improvements are going forward without interruption.

Tuscarora records sales of 24,700 shares at from 29 to 37c., the final sales to-day nearly maintaining the best price of the week.

Quicksilver, both common and preferred, has advanced, with increased sales; the total for the two stocks aggregating 12,200 shares.

As regards shares sold, Gold Placer leads, the total amounting to 142,310, closing lower. Rappahannock, a new stock, was called on the 16th inst., since when 9200 shares were sold at from 27 to 25. We refer our readers to the table of prices of sales each week, as in that the course of the whole market is given at a glance, and many items of interest may be found there.

The Homestake Gold Mining Company has declared a dividend of 30c. per share for September, payable at Wells, Fargo & Co.'s on the 25th inst. The transfer-books will close on the 20th inst.

The Green Mountain Gold Mining Company of California has declared its fourth regular monthly dividend of 5c. per share, payable on the 25th inst. The transfer-books will close on the 20th, and reopen on the 28th inst.

The La Plata Mining Company, of Leadville, Colo., has declared a dividend of 7½c. per share, amounting to $15,000.

The Little Pittsburg Consolidated Mining Co. has declared its sixth dividend of 50c. per share, or $100,000, from the net earnings for the month of October, payable November 7th. The company expects to carry to surplus account $100,000 from the earnings of October.

The product of Ontario for the first nine days of October, amounted to $35,732.21, assay value.

At the regular meeting of the Caribou Consolidated Mining Co., held in this city on the 15th inst., it was resolved to pass the regular monthly dividend, although the treasurer reported funds here and in Colorado amounting to over $26,000. Dividends will not be resumed until the hoisting-works lately destroyed by fire are renewed. It is thought that will be done in about another month.

The stock of the OK mine, of Colorado, now floated by those who handled the Chrysolite stock, and upon the same plan and basis, is, it is said, moving very freely.

The exact figures of the Homestake Mining Company's product for the second half of September are now ascertained, and prove to be $51,201.19. This is from the first use of the whole 200 stamps. The first half of the month, with only the old 80 stamps running, yielded $18,492.89. The entire product of September, therefore, amounts to $69,694.08.

OFFICE OF THE HORN-SILVER MINING COMPANY OF UTAH, 44 Wall Street.

NEW YORK, Oct. 2, 1879.

The Board of Directors have this day declared a dividend of $100,000 (one hundred thousand dollars), being TWENTY-FIVE CENTS per share (par value $25) on the capital stock of the company, payable at the office of the company on and after November 15th. Transfer books will close November 10th, and reopen November 17th.

CHAS. G. FRANCKLYN, President.

SAN FRANCISCO MINING STOCK QUOTATIONS.

Daily Range of Prices for the Week.

Name of Company	Closing Quotations. Oct. 10.	Oct. 11.	Oct. 13.	Oct. 14.	Oct. 15.	Oct. 16.	Opening. Oct. 17.
Alpha	16	15⅛	16⅛	16⅛	16	16¼	16¼
Alta	5¼	5	5⅛	6	6¼	6	6
Argenta							
Bechtel	1.15	1.15	1.15	1¼	1⅛	1⅛	
Belcher	3⅜	3.80	4	4¼	4¼	4	4
Belle Isle							
Benton							
Best & Bel.	17⅛	17⅛	18¾	19	18¾	18	18¼
BlackHawk							
Bodie	13	13	13¼	13	12⅞	12¾	
Booker							
Boston Con.		1⅛	1.45	1.40	1.30	1.35	
Bullion							
Bulwer	11¼	12	12	11¾		11	
Caledonia							
California	5¼	5¼	5¼	6¼	6	5¾	5¾
Chollar	6⅝	7	7¼	7⅛	7	7¼	7¼
Confidence	9¾		9¾	10½	10⅝	10	
Con. Imp							1
Con. Pacific	7¾	7½	7⅛	7½	7⅜	7½	7¼
Con. Va	5⅛	5⅛	5⅜	6⅜	6	6	6
Crown P'int	4⅛	4.10	4¼	4½	4.35	4¼	4¼
Endowm't							
Eureka Con	28	28	26½	28½	28¾	26¼	
Exchequer	5⅛	5⅞	5⅞	5⅞	5¾	5½	5½
Goodshaw							
Gould & Cur			10⅞	11⅛	11	10½	10½
Grand Prize	2.05	2.00	2.10	2.05	2.10	2.45	
Hale & Nor.	13¼	13¾	14⅛	15⅛	14⅜	14⅛	14⅛
Hamburg							
Homestake							
Hussey							
Indep'd'nce							
Jackson							
Julia Con.	3¾	3.80	3.90		4	4	4
Justice	3⅛	3.10	3.15	3¼	3.30	3¼	3¾
Kentuck	4	4.05	4¼		4¼	4	
Kossuth							
Leopard							
Leviathan	55c.	60c.		60c.	60c.		
Manhattan							
Mar. White							
McClinton							
MeadowVal							
Mexican	32½	34¾	38¾	41	38	36¾	38¾
Mono	6⅛	6½	6⅛	6	6⅛	6⅛	
Navajo							
North. Belle		3⅝	3¾	3.70	4	4¼	
N. Standard							
Ophir	34¾	35½	36¾	37½	36	37¾	36½
Orig. K'ys'e							
Overman	9	9	9¼	10	9⅞	9¼	
P. Sheridan							
Potosi							6
Ray. & Ely	1¼	1.20	1¼	1.15	1.20	1¼	
Richer							
Savage	12¾	12⅞	13⅜	14¼	13¼	13⅛	13⅛
Scorpion	3½	3½	4.95	5⅜	5⅜	5⅜	
Seg. Belcher							22
Sierra Nev.	50¼	55	75	76¾	70	66¾	68¼
Silver Hill	1½	1.30		1.95	1¾	1.65	1.65
Silver King							
Standard							
Summit							
Tioga			3.10	3.20	3.10	3.30	
Tip Top							
Union Con.		80½	91	87½	81½	78½	79
Utah	20	22	25¾	25¾	25	24½	25½
Ward							
WashoeCon							
Yel. Jacket	15¾	15¾	16½	16½	16	15½	

REVIEW OF THE SAN FRANCISCO MARKET.

The Comstocks took a spurt on the 13th inst., but have since shown a disposition to lower prices, partially recovering, however, as indicated by the opening quotations to-day. The advance noted was caused by the alleged favorable opening up of the lower levels of the Sierra Nevada and Union Consolidated mines. The following dispatch, dated San Francisco, October 16th, explains itself:

"The south drift on the 2300-foot level of the Sierra Nevada mine was opened for inspection yesterday, and was visited by 100 expert operators, brokers, and journalists. A press dispatch from Virginia City says the drift starts in a southerly direction, subsequently turning westward, and strikes one body at an angle of about forty degrees. The sides and face of the drift show a body of very rich ore, fair average samples of which assayed $323.30 to the ton, of which $137.50 was gold. The ore is chloride, and rich enough for all purposes, if it holds out.

"The bulls are delighted with the prospect. The bears admit that the face of the drift looks well, but claim it was nicely fixed for inspection last night, since which time not a pick has been stuck in it. They express a suspicion that the drill-holes run in advance showed that it would not be advisable to continue the drift until visitors have seen it and insiders have an opportunity to sell out on their report before unfavorable developments are made. The majority of visitors, however, dissented from this view."

A press dispatch from Virginia City, dated October 13th, says that the south drift of the 2300-foot level of Sierra Nevada is in eight feet of ore, assaying $500 per ton, and has 60 feet to run in Sierra Nevada ground. An official letter, written Saturday by the superintendent of the Sierra Nevada, says the face of the drift is in ore of good quality, with streaks of very high-grade ore running through it. Ore is also reported on the 2400-foot level of the Union, corresponding to the 2300-foot level of the Sierra Nevada. The *Daily Stock Exchange* to-day says: "The excitement does not spring from professedly official announcements, but from street reports and private telegrams concerning them."

Our mail advices confirm our telegraphic advices published two weeks ago, of a strike of rich ore in the Bullion mine. The fact of a strike seems to be as well established as any information that can be obtained from Comstock management, and while we believe the strike to be true, we know the mine to be under Comstock rule, which says volumes.

The stock of the Day mine has shown the greatest activity of any on the San Francisco list, the quotations moving between $1.50 and $1.10 per share. This mine is situated in the Bristol Range, Nevada, not far from the Hillside, and it is said that a strike has been made in running the tunnel. The ore is a smelting ore and assays well. The tunnel taps the vein 375 feet below the surface. The ore from this mine is taken a distance of 37 miles by rail to Bullionville, where it is reduced by the Raymond & Ely Mining Co.

Eureka Consolidated closed yesterday at 26¼, the lowest price of the week and a slight advance on the quotation of a week ago. The ore-bodies of the mine are looking well, and are yielding the usual quantity of ore. The latest report we have of the furnace product shows a total of 464,360 pounds of bullion during the week. Raymond & Ely is steady on the San Francisco market. This stock shows a great deal of activi ty. The various workings of this mine are said to look well. The bonanza recently discovered is said to show 500 tons of ore, which will average $125 per ton.

Mining Assessments Delinquent in October.—We are indebted to the *Stock Report* for the following list of the mining assessments delinquent at the respective offices this month, so far as made public:

Name.	Per Share.	Amount.	Del. Oct.
Amador Canal & M. Co	$2.00	$20,000	7
American M. & Dredging	20	6,000	22
Atlantic Consolidated	10	10,000	27
Best & Belcher	1.00	100,800	2
Black Bear Quartz	50	15,000	10
Benton Consolidated	50	54,000	22
Butte Creek Hydraulic	15	1,500	20
Chollar	50	56,000	3
Consolidated Slate Range	1.00	10,000	2
Crown Point	1.00	100,000	1
Dardanelles	50	30,000	10
Defiance	25	12,500	2
De Haro	10	10,000	27
Diamond Creek	5	5,000	4
Diana Gold	10	10,000	28
Double Standard	10	5,000	21
Equitable Tunnel	10	4,000	21
Franklin Gravel	60	12,000	27
Geo. Douglass	10	28,000	27
Grand Prize	50	50,000	21
Hale & Norcross	1.00	112,000	14
Hamburg	1.00	100,000	21
Isabella Consolidated	10	10,000	13
Joe Scates Consolidated	10	10,000	27
Jupiter	30	19,000	21
May Belle Consolidated	10	6,000	15
Mackay	10	10,000	27
Meadow Valley	25	15,000	22
Mexican	50	50,400	15
Mono	1.00	50,000	9
Mount Hood	10	10,000	27
Mount P.tosi Consolidated	25	25,000	28
Orient	25	25,000	13
Oriental Consolidated	25	12,500	14
Potosi	50	56,000	7
Quartz Mountain	50	5,000	27
Queen Bee	15	7,500	20
Real Del Monte	1.00	50,000	20
Red Hill Hydraulic	3	3,000	2
Sabine	10	10,000	27
Santa Mina	15	7,500	2
Savage	1.00	112,000	31
Scorpion	25	25,000	22
Sierra Nevada	2.00	200,000	3
Slate Creek	10	3,000	20
South Comstock	25	25,000	13
South Comstock Consolidated	25	25,000	20
South Standard	15	15,000	15
South Utah	10	10,000	6
Succor Mill	25	17,100	3
Summit	25	12,500	21
Tioga Consolidated	30	30,000	15
Tolo	10	10,000	27
Vancouver	10	10,000	27
West Comstock	10	10,000	20
Total		$1,620,000	

The above list embraces $1,323,300 upon Nevada, $293,000 upon California, and $4000 on Utah mines; total, $1,620,000. This is the largest amount in eighteen months. The number and amount of the assessments in the first ten months of the year compare as follows: 1879, 415, amounting to $13,139,600; 1878, 344, amounting to $11,521,900.

Assessments, with dates when delinquent: Happy Valley, 1 c.; Monte Christo, 10c., December 15th; K. K. Con., $2, December 3d; Gila, 25c., Nov. 3d; Bechtel, 15c., November 3d; Solid Silver, 25c., November 10th; Brophy, 10c., November 5th.

Company Meetings.—The following companies hold meetings on the dates set opposite their names:

Commonwealth Con. Mining Co	Oct. 22d.
Shawmut Gold Mining Co	" 23d.
De Frees Mill and Mining Co	" 20th.
Eureka Con. Mining Co	" 20th.
Giant Gap Gravel Mining Co	" 20th.
McCrackin Con. Mining Co	" 21st

Coal Stocks.

NEW YORK, Friday Evening, Oct. 17, 1879.

The coal stocks have been active, though with smaller sales than last week, and in most cases have reached higher prices than even the inflated figures of our previous report.

Chesapeake & Ohio, which commenced last week at 9⅞, has new reached 13⅛ and 14, though the sales are only 10,000 shares, as against 34,000 the previous week. Delaware & Hudson has varied from 67 to

GENERAL MINING STOCKS.

Dividend Paying Mines.

NAME AND LOCATION OF COMPANY.		Feet on Vein.	Capital Stock.	SHARES. No.	SHARES. Par Val	ASSESSMENTS. Total levied to date.	ASSESSMENTS. Date and amount per share of last.	DIVIDENDS. Total paid to date.	DIVIDENDS. Last Dividend.	HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE. Oct. 11. H.	Oct. 11. L.	Oct. 13. H.	Oct. 13. L.	Oct. 14. H.	Oct. 14. L.	Oct. 15. H.	Oct. 15. L.	Oct. 16. H.	Oct. 16. L.	Oct. 17. H.	Oct. 17. L.	SALES.
Argenta	Nev.	1,500	10,000,000	100,000	100	75,000	Jan.. 1879	20,000	July.. 1879 20													
Belle Isle	Nev.	1,500	10,000,000	100,000	100			200,000	Oct. 1879 75													
Belcher, G. S.	Nev.	1,040	10,400,000	104,000	100	1,704,400	July. 1879 1 00	15,397,200	Apr. 1876 1 00			5¼	5	5¼	5	5½	4.90	4.90	4.50	5.25	4.30	5,465
Bobtail, G	Col.	2,500	1,136,630	227,326	5	*		125,030	Sept. 1879 15													
Bobtail Tunnel, G	Col.		100,000	20,000	5	52,000	July 1873 0 30	56,000	Dec. 1878 40													
Bodie, G	Cal.		10,000,000	10,000	100	75,000	May. 1879 1 00	905,000	Oct. 1879 50	13¾	13	13¼	13	13⅜	13¼	13½	13	13⅛	13	13	.....	990
California, G. S.	Nev.	600	54,000,000	540,000	100			31,050,000	Aug.. 1879 50	5⅝	5¼	5⅝	5¼	5⅝	5½	6⅛	6⅛	6⅛	5¾	5⅞	5¾	6,335
Calumet & Hecla, C	Mich		2,000,000	80,000	25	1,200,000		14,250,000	May. 1879 5 00	217	214	214	211	216	214½	216	.....	.....	.....	.....	.....	186
Caribou Con	Col.	1,400	1,000,000	100,000	10			40,000	Sept. 1879 1					4⅜	.....	4¾	.....	4¾	4½	.....	.....	850
Central, C	Mich		500,000	20,000	25	100,000	June 1862 0 65	1,340,000	Feb. 1879 4 00													
Chollar, G. S.	Nev.	700	11,100,000	112,000	100	1,806,000	Aug. 1879 0 50	3,080,000	Feb. 1872 1 00													
Copper Falls, C	Mich		1,000,000	20,000	50			100,000	Nov. 1871 1 00	3½		4		4		4¼						1,075
Cons. Virginia, G. S.	Nev.	710	54,000,000	540,000	100	474,800	June 1873 3 00	42,120,000	Aug.. 1879 50	5⅝	5½	5⅝	5¼	5⅝	5½	6¾	6⅜	6⅛	5⅞	6	5⅛	11,145
Confidence, G. S.	Nev.	130	2,400,000	24,000	100	256,320	Apr. 1878 0 50	78,000	May. 1865 8½													
Crown Point, G. S.	Nev.	600	10,000,000	100,000	100	2,173,370	Aug. 1879 1 00	11,588,000	Jan.. 1875 2 00													
Eureka Cons., G. S. L.	Nev.		5,000,000	50,000	100	100,000	May. 1876 1 00	100,000	Sept. 1879 2 00	29	.....	29	.....	27	.....	29	28½	28½	28	.....	.....	740
Excelsior W'k'r & M. Co	Cal.	525 acres	10,000,000	100,000	100				Oct. 1879 25													
Findley, G	Geo.		200,000	200,000	1			8,000	May. 1879 1c	64	62	64	62	65	63	63	63	.....	65	66	63	26,050
Franklin, C	Mich		500,000	20,000	25	360,000	June 1876 5 00	585,000	Nov. 1871 1 00	22	20¼	23	21½	21¾	.....	21¾	21½	.....	.....	.....	.....	2,780
Gould & Curry, G. S.	Nev.	612	10,800,000	108,000	1	3,044,000	July. 1879 1 00	3,826,800	Oct. 1879 10 00													
Grand Prize	Nev.	1,500	10,000,000	100,000	100	100,000	July. 1878 1 00	400,000	Feb. 1878 1 00													
Great Eastern		1,200	300,000	300,000	1	*		10,000	July. 1879 01	33	31	34	32	35	33	34	33	33	32	33	32	16,700
Green Mountain S.M.C.	Cal.	4,350	1,250,000	125,000	10			25,000	Oct. 1879 5													
Hale & Norcross, G. S.	Nev	400	11,200,000	112,000	100	3,094,000	Sept. 1879 1 00	1,593,000	Apr. 1871 5 00													
Homestake, G	Dak		10,000,000	100,000	100	200,000	Apr.. 1878 1 00	300,000	Oct. 1879 30	40¾	40¼	40¾										170
Hukill, G. S.	Col.	3,288	1,000,000	200,000	5	*			Dec. 1878	2.45	2.10	2.35	2.45	2.55	2.25	2.45	2.35	2.40	.....	2.40	2.25	20,210
Independence	Nev.	1,500	10,000,000	100,000	100	75,000	Feb. 1878 15	225,000	Sept. 1879 25	1.75	1.70	1.80	1.55	1.65	.....	1.75	1.65	1.70	1.60	1.70	.....	2,615
Kentuck, G. S.	Nev.	95	3,000,000	30,000	100	300,000	Aug. 1878 1 00	1,252,000	Mar. 1870 5 00													
K. K. Cons.	Nev.			50,000		400,000	Aug. 1879 1 00	50,000	Sept. 1873 0 25													
Leadville	Col.		2,000,000	200,000	10	*		60,000	June 1879 10	2.85	2.80			2.95	2.90	2.95	2.90	3	2.95	3	2.90	2,510
Leeds	Uth.	3,000		60,000				78,000	Oct.. 1878 0 15													
Leopard, L. G. S.	Nev.	1,500	5,000,000	50,000	100	342,500	Sept. 1879 50	162,500	Dec. 1876 0 50													
Little Pittsburg	Col.		20,000,000	200,000	100			950,000	Sept. 1879 50													
McClinton	Cal.	1,000		60,000		60,000	May. 1879 0 25															
Manhattan	Nev.			10,000		150,000	July. 1879 1 00	400,000	Feb. 1877 1 00													
Martin White	Nev.		10,000,000	100,000	100	650,000	Jan. 1879 1 50	90,000	July. 1879 0 30			2	1.90	2	.....	2	1.90	1.85	1.75	1.80	1.65	1,920
Merrimac, S	Mas.	1,500	500,000	100,000	5	*	June	120,000	Mar.													
Minnesota, C	Mich.		1,000,000	20,000	50	436,000	..... 1869 1 00	1,820,000	Mar. 1876 0 50					5								100
Modoc	Cal.	4,000		100,000		450,000	Feb.. 1879 0 50	50,000	Dec. 1876 0 50													
Moose	Col.	39,000	2,000,000	200,000	10	*		550,000	Mar. 1878 0 25	3.10	3			3.05	2.95	3.15	2.95		3			2,800
National, C	Mich.		500,000	20,000	25	195,000	Oct.. 1875 1 00	360,000	Oct. 1873 1 00													
N. Y. & Colorado, G	Col.		1,000,000	50,000	20	*		25,000	July. 1879 0 10	1 65	.....	1.65	.....	1 60	1.40	1.55	1.45	1.50	.....	1.55	1.45	3,700
Northern Belle, S	Nev.	1,600	5,000,000	50,000	100			1 500,000	Nov. 1877 1 00													
Ontario	Uth.	3,000	10,000,000	100,000	100			2,400,000	Oc t. 1879 50													
Ophir, G. S.	Nev.	675	10,080,000	100,800	100	2,533,200	Nov. 1878 1 00	1,394,400	Mar. 1864 4 00													
Osceola, C	Mich.		1,000,000	40,000	25	880,000	Mar. 1876 2 00		July. 1879 1 50	29	.....	29½	28¾	29	.....	.....	.....	.....	.....	.....	.....	190
Pewabic, C	Mich.		500,000	20,000	25	185,000	June 1868 3 00	460,000	July 1873 1 00			4½	4	5	.....	.....	.....	.....	.....	.....	.....	342
Potosi, G. S	Nev	700	11,000,000	112,000	100	*	Aug. 1878 0 50															
Phoenix, C	Mich.		1,000,000	20,000	50	822,500	Aug. 1879 0 25	10,000	Dec. 1876 1 00													
Plumas	Cal.		1,000,000	100,000	10			151,000	July 1879 8	3.15	3	3.15	3 10	3 15	.....	3.20	3.15	.....	.....	3.05	.....	1,000
Quincy, C	Mich.		500,000	20,000	10			2,250,000	Feb. 1878 5 00	24⅞	24	24¼	.....	24¾	24¼	25	24¼	25⅜	23	.....	.....	4,238
Raymond & Ely, G. S.	Nev.	5,000	3,000,000	30,000	100	660,000	Sept. 1879 1 00	3,075,000	Sept. 1873 3 00							1.35	.....	1.35	.....			300
Ridge, C	Mich.		500,000	20,000	25	200,000		90,000	Feb. 1875 1 00	4¾	.....	5	4¾	5	.....	4¾	4½	.....	.....	.....	.....	700
Rye Patch	Nev.	1,600		30,000		157,500	Dec.. 1878 1 00	105,000	Dec. 1877 0 25													
St. Joseph, L	Mo.	2,000 acs.	1,000,000	100,000	10			250,000														
Savage, G. S.	Nev.	800	11,200,000	112,000	100	4,572,000	July. 1879 1 00	4,460,000	June 1869 3 00	12⅞	.....											100
Seaton, G. S.	Col.	1,700	500,000	50,000	10	*			May 1877 0 10											50	45	300
Sierra Nevada, G. S.	Nev.	3,650	10,000,000	100,000	100	3,250,000	Sept. 1879 2 00	102,000	Jan. 1871 1 00													
Silver Islet	Mich									25	24¾											230
Silver King	Ariz	1,500	10,000,000	100,000	100			450,000	Nov. 1878 0 50													
Standard	Cal.		10,000,000	100,000	100	50,000	July 1878 1 00	1,350,000	Oct. 1879 0 50	30	.....	30	.....	30	29¾	.....	.....	.....	.....	30	29¾	2,985
Yellow Jacket, G. S.	Nev.	1,200	12,000,000	120,000	100	3,158,000	Aug. 1879 1 00	2,184,000	Aug. 1871 2 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16½	.....	50

Non-Dividend Mines.

Allouez, C	Mich.		1,000,000	20,000	50	940,000	May 1876 5 00															
Alpha, G. S.	Nev.	366	3,000,000	30,000	100	270,000	Aug. 1879 1 00															
Alta	Nev.	600		108,000		1,101,000	Feb. 1879 1 00															
Am. Flag, G	Cl	5,300	600,000	60,000	10					30c	.....	33c	32c	34c	32c	34c	.....	36c	34c	37c	35	9,300
Andes	Nev.	2,000	500 000	100,000	....	380 000	May. 1879 0 25															
Baltimore Cons	Nev.	1,050		84,000	....	1,015,000	A pr. 1878 0 50															
Benton	Nev.	600		108,000	....	91,800	Dec. 1878 0 50															
Bechtel	Cal.			60,000	....	96,000	Apr.. 1879 0 25			1.10	.....	1.30	.....	1 20	.....	1.20	1.10	.....	.....	.....	.....	360
Belvidere	Cal..	1,500		60,000	....	33,000	Feb.. 1879 0 20															
Bertha & Edith. G	Vir.	645 acs.		500,000	1	*																
Best & Belcher, G. S.	Nev.	545	10,080,000	100,800	100	740,190	Aug. 1879 1 00															
Buckeye	Col.		2,000,000	400,000	5	*				52c	48c	55c	51c	60c	51c	57c	53c	59c	55c	58c	54c	77,900
Bullion, G. S.	Nev.	943½	10,000,000	100,000	100	3,152,000	Aug.. 1879 0 50															
Bulwer	Cal.		10,000,000	100,000	100		July. 1879 1 50			11½	...	12	.....	12⅝	12	12⅜	12	12	11½	12	11¾	1,480
Cal., B. H	Dak.		10,000,000	100,000	100	105,000	Sept. 1879 0 50														2.60	50
Caledonia	Dak.	2,188	10,000,000	100,000	100	1,740,000	Aug. 1879 0 50															
Cashier	Col.		500,000	250,000	2	*																
Challenge	Nev.	90		50,000		10,000	Nov. 1878 0 20															
Cleveland, G	Col.	3,715	250,000	25,000	10	*						3.60										1,000
Cons. Imperial, G. S.	Nev.	468	50,000,000	500,000	50	1,075,000	Sept. 1879 0 20			1.20	.....	1.25	1.20	1.25	.....	1.30	.....	1.25	.....	1.15	.....	1,900
Con. Pacific	Cal.	1,400	600,000	60,000	100	*				8	.....	8¼	7½	8	7¾	8	7¾	8⅛	7½	.....	.....	1,740
Dahlonega	Ga.		250,000	250,000	1	*				23c	21c	25c	22c	24c	23c	24c	22c	23c	21c	22	21c	28,800
Dana, C	Mich.		500,000	20,000	25	68,000	Jan.. 1863 0 50															
Day	Nev.	1,500	10,000,0 0	100,000	100	70,000	Feb.. 1879 0 15															
Dayton	Nev.	1,600	10,000,000	100,000	100	750,000	Apr. 1878 0 25															
De Frees	Ariz	1,500	10,000,000	100,000	100	140,000	May. 1879 15															
Dunean, S	Ont.		1,200,000	60,000	20	75,000	July 1876 4½															
Exchequer, G. S	Nev.		10,000,000	100,000	100	480,000	July. 1879 1 50															
Gold Placer, G	Col.		5,000,000	200,000	25	*				44c	36c	39c	31c	35c	32c	36c	30c	32c	.....	35c	32c	142,310
Goodshaw	Cal.		10,000,000	100,000	100	30,000	Apr. 1879 0 10			45c	.....	.....	.....	45c	.....	45c	.....	46c	45c	.....	.....	800
Granville, G	N. C.	1,231 acs.	300,000	300,000	1	*				23c	21c	24c	22c	36c	25c	27c	.....	24c	.....	24c	.....	16,900
Humboldt, C	Mich.		500,000	20,000	25	100,000	Sept 1878 0 15			80c	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Hussey	Nev.	4,500	10,000,000	100,000	100	125,000	Sept. 1879 0 15															
International, S	Ont.		1,200,000	60,000	20											60c	.....					50
Julia, G. S	Nev.	3, 00	11,000,000	110,000	100	872,500	July. 1879 1 25															60
Justice, G. S	Nev.	2, 00	10,500,000	105,000	100	2,973,500	Aug. 1879 1 00					3¾										
King's Mountain, G	N. C.		1,200,000	120,000	10	*																
Kossuth	Nev.	2,700	10,700,000	108,000	100	421,200	Aug. 1877 0 15					18c	15c			20c	18c	20c	18c	20c	18c	4,700
Lacrosse	Col.	3,900	1,000,000	100,000	10	*				31c	30c	32c	31c	36c	33c	38c	33c	40c	35c	35c	32c	34,850
Leviathan	Nev.	2,000	10,000,000	100,000	....	290,000	Aug. 1879 25															
Lucerne	Col.	4,200	5,000,000	500,000	10	*				27c	.....	28c	26c	27c	24c	28c	...	28c	.....	28c	27c	7,300
Madison, C	Mich.		500,000	20,000	25	123,000	Sept 1876 0 10															
Mariposa preferred	Cal.	44,387	5,000,000	50,000	100	1,425,000	June 1877 1 00											4½		4.10	.....	200
" common	Cal.	acres.	10,000,000	100,000	100	1,425,000	June 1878 1 00											3				20
May Belle		1,500	10,000,000	100,000	100	21,000	Sept. 1879 0 10															600
McCracken	Ariz	4,500	10,000,000	100,000	100	100,000	Sept. 1879 0 25															
Mexican, G. S	Nev.	600	10,080,000	100,800	100	499,400	Sept. 1879 1 50															
Mono	Cal.	750	5,000,000	50,000	100	125,000	Sept. 1879 1 00															
Navajo	Nev.	500	10,000,000	100,000	100	145,000	Feb.. 1879 0 20							35c	.....					40	.....	550
New York	Nev.	1,000	10,000,000	100,000	100	800,000	Apr. 1879 0 40															
Orig. Keystone	Nev.	1,500	10,000,000	100,000	100	125,000	July 1879 0 25															
Overman, G. S	Nev.	1,200	3,840,000	38,400	100	3,404,280	Mar. 1879 3 00															
Petherick, C	Mich.		500,000	20,000	10	165,533	.... 1876 0 50															
Quicksilver preferred	Cal.	8,500	4,291,300	42,913	100	*				32¼	31⅜	32¼	31⅛	32	31¼	32	.....	32½	30¼	.....	.....	5,491
" common	Cal.	acres.	5,708,700	57,087	100	*				14⅜	.....	15	14⅛	14⅜	.....	.....	.....	14½	.....	15⅛	14⅜	4,760
Rappahannock, G	Va	300 acres	250,000	250,000	1	*												27c	26c	26	25	9,200
Seg. Belcher, G. S	Nev.	160	640,000	6,400	100	244,800	Apr.. 1876 1 00															
Shamrock	Colo		10,000,000	100,000	100																	
Silver Hill, G. S	Nev.	5,400	10,800,000	108,000	100	1,404,000	Feb 1879 0 50															
Silver Prize	Nev.	1,500	10,000,000	100,000	100	65,000	Mar 1879 0 25															
South Hite G. M. Co	Cal.		2,500,000	100,000	25					90c	.....			60c	.....	1	.....	1	.....			500
Star, C	Mich.		500,000	20,000	..	265,000	Mar 1876 0 50			1⅜	.....	1½	1⅜	1½	1⅜	.....	.....	.....	.....	.....	.....	2,250
Superior, C	Mich.		500,000	20,000	25	340,000	... 1878 0 25															
Sutro Tunnel	Nev.		20,000,000	2,000,000	..					4½	4	3⅞	3½	3⅞	3¾	4	3⅞	4	3¾	4	3¾	21,164
Tiptop	Ariz		10,000,000	100,000	100	120,000	Apr. 1878 0 50							1	.....	1.10	.....			1.15	1.10	750
Tioga	Cal.	1,500	10,000,000	100,000	100	80,000	.... 1879 0 20			3.30	.....	3.30	3	3.40	3.25	3.50	.....	3.35	3.25	3.45	3.40	2,015
Trio	Col.	1,250	150,000	150,000	1																	
Trojan	Nev.	1,500	10,000,000	100,000	100	265,000	Mar. 1879 0 25															
Tuscarora	Nev.		10,000,000	100,000	100	35,000	Sept. 1879 0 10			30c	29c	30c	29c	35c	30c	37c	36c	36c	35c	37c	34c	24,700
Union Cons. G. S.	Nev.		10,000,000	100,000	100	860,000	July. 1879 2 00													82	.....	100
Utah	Nev.	1,000	2,000,000	20,000	100	1,060,000	Jan.. 1879 2 50															
Ward	Nev.	1,200	11,000,000	110,000	100	90,000	Apr.. 1879 0 30															
Wells Fargo	Nev	1,500	10,000,000	108,000	100	243,000	.... 1879 0 25															

Total Assessment levied to date $65,694,998

a. Gold. s. Silver. L. Lead. c. Copper. * Non-Assessable.
Total Dividends paid to date $6,87,8580

Total Shares sold during the week 529,966

64⅜, closing at 66, while Delaware, Lackawanna & Western has receded a little from the highest figure of the week before. Lehigh Coal and Navigation Company is up nearly three points, and the sales are quite large.

Maryland Coal still holds its own at 21½@22, with but few transactions. Pennsylvania RR. is very strong at 47⅜, and transactions on it have amounted to over 100,000 shares. Philadelphia & Reading has advanced about two points under the influence of the improved condition of the coal trade and the decision to call the stock on the New York Exchange. Every thing indicates an early and great improvement in the prices of coal, and the quantity which the market calls for will give full employment to all the companies. While it seems incredible that the stocks of concerns so heavily loaded down with debt as are nearly all the coal companies should be worth any thing like the present quotations, yet it does seem probable that the business in the near future will leave them a margin of profit over expenses and interest; and since it seems to be contrary to the creed of any coal or railroad company to pay off its debts, it is possible that they may try to make the public believe they are approaching dividends very rapidly. Any way, the shadow of bankruptcy, which only a short time ago seemed to be impending, now seems to be dissipated, and even the coal companies are sharing in the general "boom."

The Pennsylvania Coal Co. has declared a dividend of three per cent.

Auction Sales of Stocks and Bonds.—Pennsylvania Steel Co., 2 shares at 125½; Delaware Division Canal, 20 shares at 30; Pennsylvania Canal 6s, $1000 at 80; Sunbury, Hazleton & Wilkes-Barre 2d m. 6s, $300 at 18.

Pennsylvania Salt Manufacturing Co.—44 shares of the stock of this company sold in the Philadelphia Stock Exchange at 77.

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in at New York, Philadelphia and Baltimore, for the week ending the 26th inst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

Bonds.	Prince'l. When Due.	Int'est. When Due.	High'st.	Lowest	Amount.
D., L. & W., 7s, conv	1882	J. & D.	.....	.....	.....
" " " " 2d 7s....	1907	M. & S.	104½	103½	$9,000
M. & E., 1st con., 7s	1915	J. & D.	104½	103¼	36,000
" " " 2d 7s.....	1891	F. & A.	111½	111¼	2,000
" " " 7s, 1871...	1901	A. & O.	108	.....	4,000
N.J.C., 1st mtge. new	1890	F. & A.	115	.....	27,000
" " " 1st mtge., con	1899	Q.	100½	100	‡99,000
" " " convt. 7's ...	1902	M. & N.	103½	103	‡29,000
" " " Adimt bds...	1903	M. & N.	.....	.....	.....
" " " Income.....	1908	M. & N.	82¾	81½	9,000
L. & W. B., con....	1900	Q.	90	89	‡203,000
" " Income	1888	M. & N.	65	64½	12,000
Am. Dock & Imp. 7s	1886	J. & J.	100	98	§46,060
St. L. I. M. & S. 1st mt	1892	.....	115	.....	95,000
" " " " " 2d, 7s	1897	F. & A.	98	97½	¶191,000
St. L. & I. M. C. & F., 1st, 7s.....	1891	M. & N.	102¾	.....	2,000
St. L. & I. M. Cairo, A. & T., 1st, 7's..	1897	J. & J.	100	97¼	40,000
Ches. & O., 1st s'rs b	1908	J. & D.	.....	.....	.....
" " 6s, cr. int. df	1918	M. & N	.....	.....	.....
D & H C Co., 1st m. rg	1884	J. & J.	.....	.....	.....
" " " " "	1891	J. & J.	.....	.....	.....
" " " " m. loan cp	1894	A. & O.	.....	.....	.....
" " " " " rg.	1894	A. & O.	.....	.....	.....
" " " " new mtge.	.....	.....	.....	.....	.....
" " " " " 1st Pa. div., 7s, coup.	1917	J. & D.	.....	.....	.....
" " " " " 1st Pa.. div., 7s, rg	1917	M. & N.	.....	.....	.....
L. V. R., 1st m. 6s, cp.	1898	M. & S.	.....	.....	.....
" " " rg.	1898	J. & D.	.....	.....	.....
" " " 2d m. 7s, rg.	1910	J. & D.	.....	.....	.....
" " " con. m. 6s, rg	1823	M. & S.	.....	.....	.....
" " " " 6s cp.	1923	J. & D.	108	.....	1,000
*Pa. RR., 1st m. 6s, cp	1880	J. & D.	115¼	107½	7.000
" " g. m., 6s, cp.	1910	J. & J.	104¼	103¾	11,000
" " " 6s, rg.	1910	J. & J.	.....	.....	.....
" " con. m. 6s, rg.	1905	A. & O.	110	109	.....
" " " 6s, cp.	1905	Q.	110	.....	29,000
" " new loan, 5s	.....	J. & D.	112¼	.....	2,000
*P. & R. R., 1st m. 6s, R. C. 43-44.....	1880	J. & J.	.....	.....	.....
*P. & R. R., 1st m. 6s, R. C. 48-49.....	1880	J. & J	.....	.....	.....
*P. & R. R., gen 6s, G C	1908	J. & J.	78	77½	10,000
" " " scrip....	1882	J. & J.	79	71	38,310
" " " deb. ex-cp.	1893	.....	40	35	8,400
" " " c. m. 7s, cp.	1911	J. & D.	110¾	.....	3,000
" " " " 7s, rg.	1911	J. & D.	.....	.....	.....
" " " cvt. 7s, exc	1893	J. & J.	49	45	26,500
*L. Nav. Co., 6s, rg. m.	1884	J & Q.	107	.....	1,800
" " RR., rg. m.	1897	F. & Q.	109½	.....	100
" " cvt. Gold R.	1894	M. & S.	105	103½	10,000
" " m Gold R. C.	1897	J. & D.	101½	.....	4,000
" " con. m. 7s, rg.	1911	J. & D.	.....	.....	.....
*P. & N. Y. C., 7s, R. C.	1896 / 1906	J. & D.	.....	.....	.....
*Pa Canal, 6s..	1910	J. & J.	.....	.....	.....
*Schuyl. Nav., 6s...	1882	.....	.....	.....	.....
*Sus. Coal, 6s, c....	1911	J. & J.	.....	.....	.....
†Balt. & O. RR., 6s..	1880	J. & J.	.....	.....	.....
" " " " 6s..	1885	A. & O.	.....	.....	.....
.....	.....	.....	.....	.....	.....
Total transactions for the week					$956,110

‡ Assented
§ Of this, $1000 were assented, selling at 98½
‖ Of this, $91,000 were preferred income bonds, selling at 78@80.
¶ Of this, $113,000 were preferred income bonds, selling † 65@74.

COAL STOCKS.

Name of Company.	Capital Stock.	Shares. No.	Shares. Par Val.	Last Dividend. Mo.	Last Dividend. Y.	Last Dividend. R't.	Rate per Ann.	Quotations of New York stocks are based on the equivalent of $100. Philadelphia prices are quoted, so much per share. Oct. 11. H.	Oct. 11. L.	Oct. 13. H.	Oct. 13. L.	Oct. 14. H.	Oct. 14. L.	Oct. 15. H.	Oct. 15. L.	Oct. 16. H.	Oct. 16. L.	Oct. 17. H.	Oct. 17. L.	Sales.
	*		*				Per c'nt													
Ches. & O. RR	15,000,000	150,000	100	.....	..	..	.....	14⅝	13½	14⅞	13	14¼	14	14½	13½	13⅞	12¾	13⅝	13⅜	10,200
Consol. Coal.	10,250,000	102,500	100	Jan.	77	2½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Del. & H. C..	20,000,000	200,000	100	Aug	76	4	9	67	65¼	66¼	63¾	66	65¾	66¾	64¾	64¾	64¾	66¼	65⅝	11,6 0
D., L. & W. RR	26 900 000	524,000	50	July	76	2½	5	79	76¾	78	74¾	78¾	77	78¾	76¾	77¼	76¼	78⅝	77⅜	107,000
Lehigh C. & N	10,148,550	208,971	50	Nov	76	1½	5½	27⅜	27	28¼	27	27⅜	27¼	28	27½	28⅜	27⅛	30	29⅝	34,2 0
Leh. V'y R. R	27,228,855	540,858	50	J'ne	79	1	4	49¼	48¾	49	48	48¾	48¼	48¾	48¼	48¾	48⅛	48⅞	48¼	4,800
Maryl'd Coal	4,000,000	44,000	100	Jan.	76	1½	1½	.....	.....	.....	.....	21¾	21⅜	.....	.....	.....	.....	22	21½	1,300
Morris & Es'x	15,000,000	300,000	50	July	79	3½	7	96	95⅛	96¼	95½	99	96	98¼	97½	97⅝	96¾	97⅝	97	12,400
N. J. C. R. R.	20,000,000	200,000	100	Apr	76	2½	2½	70¾	68¼	69⅝	64¾	73¼	69⅝	73	70⅛	71¾	70⅛	72⅜	71⅜	92,600
Penn. Coal...	5,000,000	100,000	50	Aug	79	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. R. R...	68,870,200	1,337,404	50	May	79	2	8	46¾	45	47¾	46¼	47¾	46½	47⅜	47	47⅜	47⅛	47⅜	47⅛	101,300
Ph. & R. R. R	34,278,175	685,563	50	Jan	76	2½	10	26⅜	25½	27¼	25½	27	25¾	27¼	26⅜	27⅛	26⅝	27⅜	27¼	194,200

The Delaware & Hudson Canal Co. has paid in dividends to date $38,821,104, and the Philadelphia & Reading, $43,012,497
Total Sales.. .... 620,630.

Copper and Silver Stocks.

[Reported by S. G. Studley, Commission Stock Broker, Member of the Boston Stock Exchange, No. 51 State street, Room M, Merchants' Exchange.]

Boston, Oct. 16, 1879.

As a natural consequence, the rapid advance in coppers has brought out many who were anxious to realize, and at the opening of the week the market was generally lower. A reaction, however, set in, and at the close to-day the market is strong, with a recovery from the lowest prices.

Calumet & Hecla declined to 214 October 13th, advancing to 219 sales to day with that asked for small lots.

Central is in demand, at 33 bid; it is rare that any is offered.

Copper Falls, 4¼@4½.

Franklin declined to 20½ October 11th, recovering to 22¾@23 to-day.

Quincy has steadily advanced to 30, sales to-day closing at 29½@30.

Pewabic, sales at 5, October 14th; that asked.

Ridge, 4½@4⅝.

Blue Hill, 4@4½, with sales at 4⅜ to day.

Mesnard, 3½@3½.

The smaller coppers are quiet, with trifling change in quotations.

SILVER STOCKS.

Silver Islet has been heavy, gradually settling to 23½, sales to-day closing at 23½@24.

Duncan Silver declined to 3⅞@4⅛.

September Copper Products are reported as under:

Mine.	Tons.	Lbs.
Calumet & Hecla...	1,383	115
Osceola	158	.....
Franklin	148	1,300
Atlantic	142	1,635
Quincy	150	1,115
Allouez	54	1,095
Total	2,037	1,260

Gas Stocks.

New York, Friday Evening, Oct. 17, 1879.

We advance the price of nearly every stock in the following list, the rise being influenced by the prospect of a speedy settlement of the gas-war. Rumors of a consolidation of the companies supplying the city of Brooklyn, favorably act upon those stocks, and in some instances we note an appreciation of 10 per cent.

Gas in Wabash, Ind.—Articles of association have been filed with the Secretary of State, incorporating the Wabash Gas Company, the capital stock of which is $30,000.

AUCTION SALES.

Metropolitan (New York) Gas Co., 17 shares at 118; Metropolitan (New York) Gas Co, scrip, $4180, 192@ 192⅛; Manhattan (New York) Gas Co., 80 shares at 150@ 150⅛; North. Liberties (Philadelphia) Gas Co., 30 shares at 35.

The *San Francisco Gas Co.* has declared a dividend of 75 cents per share, payable October 15th.

THE BULLION MARKET.

New York, Friday Evening, Oct. 17, 1879.

Owing to very limited supplies, with an increased demand in London, the market has advanced there about the equivalent of one cent an ounce, and is reported firm. On the whole, there is a general belief that we shall soon see higher rates. This advance may be gradual, however, and will be found to depend greatly on a revival of trade with the East Indies.

DAILY RANGE OF SILVER IN LONDON AND NEW YORK, PER OZ.

Date.	London Pence.	N. Y. Cents.	Date.	London Pence.	N. Y. Cents.
Oct. 11.....	52⅛	113⅛	Oct. 15	52	113
Oct. 13.....	52 1-16	113⅜	Oct. 16	52¼	*
Oct. 14.....	52 1-16	113	Oct. 17	52¼	113⅜

* 113⅜@113½.

We are indebted to the courtesy of the following companies for the official report of production of their respective mines, for the month of September, 1879:

Grand Prize Mining Co.:

Tons of ore treated.....		378
Bullion yield of above:	Silver.....	$23,319.17
	Gold.....	1,335.83
Total.....		$24,655.00

Independence Mining Co.:

Tons of ore treated.....		320
Bullion yield of above:	Silver.....	9,016.70
	Gold.....	569.22
Total.....		$9,585.92

Alexander Mining Co.:

Bullion shipped.....	$32,858.88

BULLION SHIPMENTS.

We give below a statement showing the latest bullion shipments, in addition to those announced in our issue of October 11th, 1879:

Sept.	28th	Martin White	Nev.	$5,324
"	29th	Northern Belle	"	4,348
"	30th	Standard	Cal.	39,139
"	30th	Phœnix	Nev.	1,940
October	1st	Christy	Utah	12,107
"	1st	Martin White	"	3,427
"	1st	Northern Belle	"	7,036
"	2d	Ophir	"	53,306
"	2d	Raymond & Ely	"	5,559
"	2d	Mineral Park	Ariz.	787
"	2d	William M. Hardy	"	930
"	2d	Isabella	Nev.	3,600
"	3d	Eureka Consolidated	"	67,830 lbs.
"	3d	Wells, Fargo & Co	"	900
"	3d	Passing Eureka	"	6,515
"	3d	Alexander	"	8,405
"	3d	Martin White	"	8,552
"	3d	Old Telegraph Germania, and Terry Mill.	Utah	11,660
"	3d	Christy	"	2,614
"	3d	Stormont	"	8,864
"	4th	Richmond	Nev.	17,370
"	4th	Eureka	Nev.	6,560
"	4th	Consolidated Virginia	"	52,953
"	4th	Leopard	"	3,200
"	4th	Paradise Valley	"	1,335
"	4th	Northern Belle	"	6,087
"	4th	Ontario	Utah	2,716
"	4th	Christy	"	2,014
"	4th	Tybo Consolidated	Nev.	4,100
"	4th	Express from Eureka	"	17,370
"	4th	Lang Syne Mine	"	2,000
"	4th	Stormont	Utah	8,900
"	4th	Horn-Silver	"	28,367 lbs.
"	4th	Richmond	Nev.	$17,369
"	5th	Eureka Consolidated	"	64,780 lbs.
"	6th	Silver King (concentrations)	Ariz.	10,000 lbs.
"	6th	Belleville	Nev.	4 bars.
"	6th	Belle Isle	"	$12,000
"	6th	Grand Prize	"	7,000
"	6th	Bodie	Cal.	25,000
"	6th	Eureka	Nev.	3,332
"	6th	Old Telegraph and Germania	Utah	13,850
"	6th	Ontario	"	6,852
"	6th	Christy	"	12,107
"	6th	Horn-Silver mine	"	39,280 lbs.
"	6th	Oneida, Sutter Creek	Cal.	$3,472
"	7th	Hannington & Mellor	Colo.	8,500
"	7th	Old Telegraph and Morgan	Utah	6,350
"	7th	Ontario	"	4,336
"	7th	Leeds	"	5,416
"	7th	Cortez District	Nev.	13,036
"	7th	Paradise Mining Co	"	3,669
"	7th	Belle Isle	"	10,940
"	7th	Eureka	"	3,100
"	7th	Richmond	"	11,168
"	7th	Tybo Cons	"	4,100
"	8th	First Nat'l Bank, Central	Colo.	15,200
"	8th	Gunnell	"	6,000
"	8th	Old Tel. and Germania	Utah	7,280
"	8th	Stormont	"	6,295
"	8th	Christy	"	1,710
"	8th	Eureka Cons	Nev.	61,475 lbs.
"	9th	Ontario	Utah	$4,122
"	9th	Tybo Cons	Nev.	64,905 lbs.
"	9th	Old Tel. and Germania	Utah	$6,650
"	9th	Eureka Cons	Nev.	2,785
"	10th	Old. Tel. and Chicago	Utah	4,870
"	10th	Ontario	"	4,015

Caribou.—The Caribou mine of Boulder (Colo.) yields $20,000 per month, of which half is said to be profit.

The total receipts of bullion at Salt Lake City from September 26th to October 3d, were $108,366.23.

Tybo Consolidated.—The amount of bullion shipped from Tybo (Nev.) since September 1st to October 4th, amounts to $21,034.32.

During September, the Utah Central Railroad received, at Salt Lake City, 135,270 lbs. of ore, and forwarded 392,887 lbs. of ore and 2,050,354 lbs. of bullion. The Utah Southern Railroad received 1,863,437 lbs. of bullion and 2,525,855 lbs. of ore, and forwarded 489,960 lbs. of ore. The average bullion shipments per week over the Utah Central Railroad for the past six months have been 619,000 lbs.

In September, Bodie produced $129,698; Standard, $156,589; Star, $32,764; and Northern Belle, $53,800.

Ontario.—The Ontario mine produced $120,219 bullion during the month of September.

Star Mine.—It is said that the Star mine has good ore enough in sight to keep its mill running for a year, and will continue to ship bullion with the same regularity as in the past.

Richmond.—The Richmond mine, of Eureka, during September, shipped bullion valued at $122,390.83.

Ophir.—Up to October 4th, the September shipments of bullion from the Ophir mine amounted to $96,373.25, with the final shipment yet to be heard from.

Young America.—The bullion shipment for the month of September by the Young America mine, of Tuscarora, Nev., was $6100; Jones & Welsh, $1200. In addition to the above, considerable crude bullion was shipped from

the De Frees mill, the value of which could not be ascertained.

Manhattan.—The Manhattan mill, of Austin, Nev., during the month of September reduced 509 tons of ore, assaying as follows:

Custom ore	$32,412
Tribute ore	28,691
Curtis shaft	39,279
North Star shaft	2,438
Total	$102,820

The First National Bank, of Central, Colorado, received, on the 8th inst., a gold retort, weighing 354 ounces and 4 pennyweights, the produce of the Gunnell mine for the last month, representing a currency valuation of nearly $6000. It is thought that before many months this mine will be in shape for producing four times that amount monthly.

The shipments of bullion from Silver Reef, Utah, through Wells, Fargo & Co., for September, aggregate $76,540.25, of which amount the Stormont Company's mill turned out $51,852.41.

During the quarter ended September 30th the receipts of treasure at San Francisco, through Wells, Fargo & Co.'s Express, amounted to $13,822,892, namely, $4,494,704 in silver bullion, $4,868,704 in gold-dust and bars, and $4,459,994 in coin.

The following is an official statement of the ore extraction and milling operations of the Bonanza mines for the week ended September 27th, as compared with the previous week:

Con. Virginia:	Previous week.	Past week.
Extracted, tons	927	1,116
Delivered to mills	846	1,026
Remaining in ore-house	198	270

A bullion shipment valued at $52,953.88 was made Saturday, making the total received for September account to date $109,020.81.

California:	Previous week.	Past week.
Extracted, tons	1,080	837
Delivered to mills	1,080	837

The gross product of the Phœnix-Burroughs mine, situated in Colorado, for September, was $4446.

The Carson Mint in September coined $95,620, of which $17,620 was in gold eagles and $78,000 in standard dollars.

The Bodie District Shipments.—The *Standard* of the 1st inst. reports the following shipments for September:

Standard	$156,589.38
Bodie	129,697.97
Total	$286,287.35

From the 1st of January to the 30th of September, nine months, the bullion shipments compare with last year as follows:

	1878.	1879.
January	$111,567.97	$197,921.16
February	84,473.50	136,714.44
March	78,449.77	189,403.76
April	76,619.33	208,592.14
May	62,026.15	161,223.83
June	85,912.84	285,093.74
July	110,075.79	170,599 63
August	699,944.33	213,518.15
September	317,020.63	286,287.35
Totals	$1,625,980.31	$1,849,354.20
Total, first nine months in 1878		1,625,980.31
Increase thus far this year		$223,373.89

The production of the district during September was the largest of any month so far in 1879; that of Bodie Consoldated was nearly twice as great as during August.

The Valley smelting works, of Golden, Colo., an institution born of the profits realized in Golden's experimental smelter, has doubled its capacity within the past half-year, and has ores to spare for shipment to Omaha.

The Gold Flood.—There appears to be no diminution in the gold receipts, and we append the following statement as showing the arrivals at the port of New York, in addition to those announced in our last issue:

	Amount.
Steamer San Domingo, Porto Plata, United States silver	$18,640
Steamer Germanic, Liverpool, gold bars	273,524
" Mosel, Southampton, gold bars	499,800
" " " United States silver.	58,398
" Algeria London, gold coin	290,000
" Labrador	516,000
" Suevia, gold coin	411,400
Total	$2,067,762
Announced in our last	44,725,710
Grand total, since January 1st, 1879	$46,793,472

LONDON, Oct. 14.—The *Daily News*, in its financial article this morning, says: "A considerable quantity of American bills was offered in the market yesterday, presumably to cover an early payment for iron already shipped. If gold continues to leave England and France to the same extent as it has lately done, it will soon become necessary to consider the possibility of a measure to stop the outflow. It will be time for England to consider what action to take when the French authorities make a move by directly or indirectly raising the premium on gold to such a point that the whole incidence of the United States demand is thrown on this country."

LONDON, Oct. 15.—The *Times*, in its financial articles this morning, says: "It is feared that some failures may take place on the Stock Exchange to-day among the bears, in consequence of the recent enormous rise in prices."

The *Daily Telegraph*, in its financial article this morning, says: "A further considerable amount of gold may be taken from the Bank of England to-day for shipment to America."

PARIS, Oct. 16.—The *Cote Europienne* says "that 10,000,000 francs in gold (about $2,000,000) left here this week for New York, and a similar sum was withdrawn from the bank for the Swedish government.

"Of the bullion withdrawn from the Bank of England to-day, the sum of £56,000 ($271,600) was for shipment to America."

Bullion for Coinage.—WASHINGTON, Oct. 15.—At the weekly opening of offers for the sale of silver bullion to the government to-day, the Treasury Department purchased 50,000 ounces for delivery at the Philadelphia Mint, making the amount purchased so far this month 670,000 ounces. It is stated that a large amount of that offered was declined, the price asked being above the market rate.

Coin in the West.—The Chicago *Tribune* of October 11th says: "The Chicago Sub-Treasury has received $700,000 in gold and silver in the last two days, and is prepared to supply the banks freely. The banks, now that they can get it, don't care for the gold as much as they did. Several banks, however, took sums of $50,000 and $75,000, and shipped it in $5000 and $10,000 lots to country correspondents who had applied for it. This will give the West its first sight of actual coin since the resumption of specie payments, over nine months ago."

Exports of Gold and Silver from New York:

Week ending October 10th	$153,207
Corresponding week last year	171,211
Since January 1st, this year	12,629,889
Corresponding period last year	10,429,732

Gold Interest Paid out by the Treasury:

Week ending October 10th	$894,511
Corresponding week last year	372,910
Since January 1st, this year	49,503,045
Corresponding period last year	55,270,989

The Year's Coinage.—In the forthcoming report of the Director of the Mint it will appear that the total coinage for the last fiscal year was $68,312,592.50, divided as follows: Gold, $40,986,912; silver, $27,227,882.50; and minor coinage, $97,798. Of the gold, $37,234,340 was in double-eagles, $1,031,440 in eagles, $1,442,130 in half-eagles, $1,106,800 in quarter-eagles, $109,187 in $3 pieces, and $3020 in $1 pieces. Of the silver, $27,227,500 was in dollars, $225 in half-dollars, $11,250 in quarter-dollars, $45 in dimes, $1175 in five-cent pieces, $984 in three-cent pieces, and $95,639 in cents.

The Bank of England to-day (17th of October) lost £445,000 bullion, the withdrawals having been mainly for shipment to New York.

METALS.

NEW YORK, Friday Evening, Oct. 17, 1879.

The metal market is still considerably excited. The speculation in some articles is very active, while there is also a very good consumptive demand for several articles. The London market is very wild, if we can judge from cable advices.

Messrs. Vivian, Younger & Bond, of London, under date of October 3d, say:

"The general improvement noticed in our last monthly report has considerably developed of late. The American demand for iron assumes proportions that, until recently, those best informed were quite unprepared for. Scotch pigs have to-day reached 63s. per ton, a rise of 50 per cent in less than two months. Articles that can lay claim to exceptional cheapness are now sought for eagerly by speculators, who disregard statistics and look only to the average range of values. Consumers, who went out of stock during the declining prices, would do well, perhaps, if they were animated by a little of the same spirit, and were for once in a way to anticipate their probable requirements."

Copper.—The sales have amounted to about 500,000 lbs. At the close 21¼@22c. is asked. Chili bars were quoted in London yesterday at £67@£68. The manufacturers are having a very active demand for their wares, and are consuming a large amount of copper. London advices of the 7th inst. say:

Messrs. Vivian, Younger & Bond say of copper:

"There has been a large business during the past month. Chili bars rose from £55 15s. to £58, and though the charters for the first half of the month were cabled as 2600 tons fine, this caused a reaction to £57 for a few days only, the market gradually hardening again to $58. The charters for the second half of September were advised by cable as 2300 tons; this caused a slight relapse to £57 10s., but the speculative demand was not to be stalled off, and prices rose to £58 10., buyers preponderating, until £61 was quickly reached. The market closes with an upward tendency at £61 10s., cash buyers, and £62 10s. paid for three months prompt. The deliveries for the month were good.

"The quantity of Chili bars, ores, and regulus in stock at, and afloat for, Liverpool, Swansea, and Havre, and of English and foreign copper in London, is thus estimated in fine copper:

	Oct. 1st, 1879.	Oct. 1st, 1878.	Oct. 1st, 1877.
Stock	39,838	37,865	30,652
Chili produce, shipping and afloat, per mail advices	11,700	5,800	4,200
Total tons	51,538	43,665	34,852
	Oct. 1st, 1879.	Sept. 1st, 1879.	Aug. 1st, 1879.
Stock	39,838	41,835	41,031
Chili produce, shipping and afloat, per mail advices	11,700	9,100	8,700
Total tons	51,538	50,935	49,731
Chili produce chartered for, per cable advices received up to date	3,500	6,000	5,900
Australian produce afloat	1,700	1,200	800

The reported sales of Chili bars in London for the six days ended October 4th amounted to 5350 tons.

Tin.—This has been the most active metal on the list. The price in London is up from £10 to £14 since our last, while here the price has advanced about 5c. per lb. It is difficult to get at correct foreign quotations, while our own market bears the appearance of being close on to a "corner." The quotation at Singapore yesterday was $29.00, and at Penang $29.20, with exchange at 3s. 9⅝d. The shipments from the Straits to this country for the first half of this month, were 175 tons by steamer, and 50 tons by sail. The business in this market has probably amounted to 1000 tons for the week, selling up to 25½c. with 25½@26c. asked at the close. To arrive, 200 tons sold at 24½c.

Messrs. Vivian, Younger & Bond say of tin:

"Foreign fluctuated between 71s. and 74s. for the greater part of the month, and, after declining to 71s. 6d. before the Dutch sale, again rose to 74s. The market closes firm at 75s., and English, 77s. September shipments from the Straits were 140 tons, and from Australia estimated at 450 tons (the cable being interrupted). Deliveries of foreign from London, 960 tons, and from Holland, 505 tons. At the Dutch Trading Company's sale, on the 30th ult., 23,059 slabs Banca were sold at an average of 42¾fl., equal to about £72 10s., London. The stock of foreign tin in London and Holland is thus estimated:

	1879. Sept. 1st. Tons.	1879. Oct. 1st. Tons.
Foreign tin in London	9,742	9,438
Banca tin in Holland	1,435	1,828
" in company's hands	1,026	1,347
Billiton tin in Holland	2,272	2,320
	14,457	14,933
Quantity of tin afloat for Europe.	3,100	3,000
	Per ton.	Per ton.
Quotations on the same dates, being for Straits	£70	£75
	1878. Oct. 1st. Tons.	1877. Oct. 1st. Tons.
Foreign tin in London	10,181	9,271
Banca tin in Holland	1,661	1,354
" in company's hands	977	865
Billiton tin in Holland	1,676	1,440
	14,495	12,930
Quantity of tin afloat for Europe.	3,500	3,000
	Per ton.	Per ton.
Quotations on the same dates, being for Straits	£52 15s.	£36

Tin Plates.—There has been a large business in cokes. Other kinds are strong but quiet. Stocks are very light. The Liverpool market is very strong, and the whole tendency is higher. We quote per box as follows: ⅛ X Melyn grade, $7.87½@$8.12½; Allaway, $7.75@$7.87½; Dean & S. T. P., $7.25, for ordinary size; and large, $15; ordinary Allaway, $7, and large, $14.25; coke tins, B. V. grade, $7.25, and roofing, $6.37½.

Messrs. Robert Crooks & Co., of Liverpool, under date of October 2d, says: "Tin and Terne Plates have, of all descriptions, been so heavily booked to the end of the year that present quotations are, to a large extent, nominal, as makers, owing to the advancing price of material, decline to quote for deferred delivery. The outlook is strong."

Lead.—This article has been quiet, and is a little weak. Sales amounting to from 400 to 500 tons in all are reported at prices running as high as 5½c. for ordinary, and 5¾c. for refined. At the close, common can be purchased at 5¼c., although some still ask 5½c.

The receipts of lead at St. Louis, by the St. Louis & San Francisco RR., for the week ending October 7th, were 214 tons, making a total of 6034 tons, sinc January 1st.

The exports of pig-lead from London and Liverpool to the East for the first nine months of 1879, 1878, and 1877 were as follows:

	1879. Tons.	1878. Tons.	1877. Tons.
To Madras	260	201	16
" Calcutta	310	458	144
" Bombay	596	167	156
" China	4,710	8,235	10,999
" Japan	351	854	1,434
" Singapore and Penang	101	96	500
	6,328	10,011	13,249

Messrs. French & Smith, of London, under date of October 2d, say of lead:

"The price is slightly improved since our last month's circular, mainly due to the impression that production is slowly declining. The home trade has been dull; otherwise, we should probably have seen a much stronger market. We quote English lead £15 to £15 2s. 6d.; soft Spanish, £14 17s. 6d. to £15; silver-lead is rather scarce, quotations about £14 15s. to £14 17s. 6d. The arrivals of foreign in the United Kingdom during September we estimate at 7500 tons.

"The imports and exports, January to August (eight months), were, by the Board of Trade returns:

	1879. Tons.	1878. Tons.	1877. Tons.
Imports	67,060	68,102	63,492
Exports	25,107	24,383	28,237

Spelter and Zinc.—Spelter is in light stock with a fair business doing, and is quoted at 6¼c. Sheet zinc has been in liberal request, and is up to 8@8¼c.

Bergen Port spelter, from Lehigh ores, has been advanced to 10c. per lb.

Antimony.—The business will probably aggregate 50 casks. Cookson's is quoted at 19½@20c., and Hallett's at 19c.

Quicksilver.—The San Francisco *Commercial Herald* of October 9th says: "With a very light export demand,

prices have again dropped to 34@34½c. The Newbern, for Mexican ports, carried 398 flasks, and the City of Tokio, for Hong Kong, 400 flasks. The Nidaros, for San Blas, carried 200 flasks. The bark Kiota, for Callao, had 425 flasks."

IRON MARKET REVIEW.

New York, Friday Evening, Oct. 17, 1879.

American Pig.—This article is very quiet and somewhat weak. The outlook is in favor of a decline. In fact, we learn of No. 1 Bessemer iron offered at $28 per ton without takers. There has been a large number of furnaces put in blast, and it would be well for those still contemplating such a move to weigh well their prospects before blowing in. That the country has a productive capacity greater than any requirements that may come up for several years is unquestioned, and there is a point in the production where prices must decline. It will do well to wait a little, and see if that point has not already been reached. The scarcity of good ores has advanced their prices, and the indications are favorable to a further advance. The price of coal has advanced, and will go still higher. The cost of labor will probably increase. With an assured increase of cost, and a posible further decline in the price of pig-iron, the production of it may not prove so profitable a business as many suppose. We find it rather difficult to give quotations, but the following are as near as we can secure: No. 1 Foundry, $29@$30; No. 2 Foundry, $28@$29; and Forge, $27@$28.

Scotch Pig.—The business in this article has been quiet, although prices are nominally unchanged. It is probable that some of the iron now *en route* will have to go into store. Prices in Glasgow have declined, owing to over-speculation. We quote Eglinton at $27.50@$28; Glengarnock, $28@$28.50; Coltness, $31; Gartsherrie, $28.50@$29.

According to the circular of Messrs. John E. Swan & Brothers, of Glasgow, bearing date of October 3d, 1879, the number of furnaces in blast was 69, against 69 last week and 90 a year previous. The quantity of iron in Connal & Co.'s stores was 318,350 tons, showing an increase of 6623 tons during the week. The shipments show an increase of 11,474 tons since Christmas, as compared with shipments to same date in 1878. The imports of Middlesbrough pig-iron for the same periods showed a falling off of 31,923 tons since January 1st, 1879.

The following are the quotations of the leading brands of No. 1 Scotch pig-iron: Gartsherrie, 70s.; Coltness, 75s.; Langloan, 70s.; Summerlee, 70s.; Carnbroe, 70s.; Glengarnock, 71s.; and Eglinton, 67s. Middlesbrough pig-iron was quoted as follows, f. o. b., Tees: No. 1 Foundry, 48s. 6d.; No. 2, 46s. 6d.; No. 3, 45s.; No. 4, 44s. 6d.; and No. 4 Forge, 44s.

Under date of September 30th, Messrs. John E. Swan & Brothers say: "The continuous and expanding nature of the demand for iron of all descriptions, now experienced here, has given a much more assured tone to iron and other allied interests. America is, however, by far our largest customer at present, but, as the world generally is short of pig-iron, other countries, such as Germany, France, and Canada, are already showing signs of being buyers, and this will assist the improvement now going on. Very extensive orders from America for steel rails are being placed here. We have heard recently of 65,000 tons."

Rails.—These are very stiff and show indications of advancing. We note the sale of 1500 tons steel at $50, at works. We quote steel rails at $52@$55 here, and iron rails at $49@$50.

Messrs. John H. Austin & Co., of London, under date of October 1st, say: "Iron rails are still inquired for to a moderate extent, and the price continues to stiffen. Steel rails have taken a sudden but not altogether unlooked-for bound, and are very firm at our quotations. Old rails are in strong demand at 90s. per ton, paid c. i. f., U. S. ports. We quote iron rails at £4 10s.@£5, and steel rails £5@£5 10s.

Old Rails.—The sales reported to us aggregate about 5000 tons, selling up to $32.50. We quote at $32@$32.50.

Wrought Scrap.—There is some difference of opinion as to the value of this article. We quote at $35@$37.50.

Mr. Robert Palen, of Palen & Burns, our Buffalo correspondents, is at No. 70 Wall street, making purchases of iron for the firm's Western customers.

We publish the following letters from our regular correspondents:

"Baltimore, Oct. 13, 1879.

"The iron market remains about same as last report, and we continue last quotations.

"R. C. Hoffman & Co."

"Columbus, O., Oct. 14, 1879.

"The pig-iron market the past week has been somewhat less excited than for a few weeks previous, owing to the fact that consumers are pretty well stocked for immediate wants, and are disposed to take their chances on prices going higher before they are again in the market. There is a scarcity of Red Short Irons in the market, and while this exists, we may look for still higher prices on this grade.

"King, Gilbert & Warner."

"Louisville, Ky., Oct. 13, 1879.

"The market is very firm. Very little iron is offered at any price.

"Our correspondents at Glasgow, Scotland (John E. Swan & Bro.), in answer to a letter from us asking them to quote round lots of 500 or 1000 tons of scrap iron, or old English rails, reply as follows, under date of October 2d:

"'We duly received your favor of the 17th ult., and its contents have our attention, but it is simply impossible for us to quote you for any such quantities of old iron rails as those you indicate in your letter, as the United States has already cleared out almost, if not entirely, the whole of the stock in this country, and the continent of Europe. The drain on this old material has been something extraordinary, and now that supplies are immeasurably short of the demand, America has had to fall back upon our Scotch and Middlesbrough pig-iron, for which orders come pouring in daily.'

"This information will surprise the parties who seem to think that there is no end of foreign scrap.

"Sales are all for cash, and we quote on this basis:

"Geo. H. Hull & Co."

"Pittsburg, Oct. 14, 1879.

"During the past two weeks, there has been no excitement in this market, and transactions have been mostly limited to small parcels for sorting up stocks. Most of the large buyers are well filled up for present needs, and see no object in buying ahead at present prices. The market remains firm, however, and holders show no disposition to accept any lower figures than those now quoted.

"A. H. Childs."

"Richmond, Va., Oct. 13, 1879.

"Over 300 tons of pig-iron, cold-blast charcoal and anthracite, were bought by consumers the past week. The market continues firm, with an advance in several items of the schedule.

"Asa Snyder."

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending Oct. 11th, and years from January 1st:

Tons of 2240 lbs.	1879. Week.	1879. Year.	1878. Week.	1878. Year.
Wyoming Region.				
D. & H. Canal Co.	67,416	2,585,716	49,351	1,587,301
D. L. & W. RR. Co.	82,998	2,877,243	49,729	1,580,465
Penn. Coal Co.	29,955	1,087,364	24,453	664,930
L. V. RR. Co.	25,598	787,631	15,021	603,336
P. & N. Y. RR. Co.	917	26,490	813	24,373
C. RR. of N. J.	38,844	1,463,730	35,811	727,626
Penn. Canal Co.	16,265	350,201	13,271	271,024
	261,993	9,178,375	188,450	5,459,035
Lehigh Region.				
L. V. RR. Co.	75,059	2,498,023	53,744	1,807,911
C. RR. of N. J.	45,795	1,601,836	44,390	992,416
D. H. & W. B. RR.		19,804	1,342	26,264
	120,854	4,119,663	99,746	2,826,591
Schuylkill Region.				
P. & R. RR. Co.	153,459	5,763,741	184,723	3,764,156
Shamokin & Lykens Val.	39,856	709,352	25,735	565,162
	184,315	6,473,093	210,458	4,329,318
Sullivan Region.				
Sul. & Erie RR. Co.	289	36,932	1,112	25,746
Total	567,451	19,808,063	499,496	12,640,690
Increase	67,955	7,167,373		
Decrease				

Total same time in 1874	15,013,259	tons.
" " " 1875	14,409,596	"
" " " 1876	12,915,466	"
" " " 1877	14,805,495	"
" " " 1878	12,640,690	"
" " " 1879.	19,808,063	"

The above table does not include the amount of coal consumed and sold at the mines, which is about six per cent of the whole production.

Belvidere Delaware Railroad Report for week ending Oct. 11th:

	Week.	Year. 1879.	Year 1878.
Coal for shipment at Coal Port (Trenton)	93	14,511	8,908
Coal for shipment at South Amboy	6,424	328,234	336,787
Coal for distribution	8,159	247,708	135,955
Coal for Company's use	2,387	72,306	63,350

The decrease in shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania railroads, amounts to 118,404 tons, as compared with the corresponding period in 1878.

Coals Cleared on the Canals of the State of New York from Oct. 1st to Oct. 7th, inclusive:

Tons of 2000 lbs.	1879.	1878.
Anthracite	18,548	17,480
Bituminous	6,551	5,624
Totals	25,099	23,104

Perth Amboy Business:	Tons.
Received for the week	31,286
Shipped for the week	31,931
On hand Oct. 11th	137,810

The Production of Bituminous Coal for the week ending Oct. 11th was as follows:

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2240 lb	5,161	1,133,518
Barclay Region, Pa.		
Barclay RR., tons of 2,240 lbs.	6,188	252,937
Broad Top Region, Pa.		
Huntingdon & Broad Top RR.	3,658	107,556
*East Broad Top	1,471	46,780
Clearfield Region, Pa.		
*Snow Shoe	1,112	47,434
*Tyrone and Clearfield	35,356	1,085,552
Alleghany Region, Pa.		
*Pennsylvania RR.	4,876	137,135
Pittsburg Region, Pa.		
*West Penn RR.	4,594	147,968
*Southwest Penn. RR.	655	27,756
*Penn & Westmoreland gas coal, Pa. RR.	11,459	54,021
*Pennsylvania RR.	14,586	360,253

*For the week ending Sept. 21st.

The Production of Coke for the week ending Sept. 21st:

Tons of 2000 lbs.	Week	Year.
Penn. R.R. (Allegheny Region)	1,166	36,445
West Penn RR.	1,255	67,442
Southwest Penn. RR.	22,311	688,254
Penn. & Westmoreland Region, Pa. RR.	2,282	66,234
Pittsburg, Penn. RR.	4,723	124,231
Total	31,737	982,606

THE COAL TRADE REVIEW.

New York, Friday Evening, Oct. 17, 1879.

Anthracite.

At last, coal has joined the general "boom." There is a very large business doing and sales are being made at prices from 30c. to 70c. per ton above those which ruled a month ago. The general expression in the trade is, that there will be a very good demand during the whole winter, but not sufficient to maintain prices unless some curtailment be established for December, January, and February. It is said that this will be arrived at, if necessary, without the details of a combination; probably by the plan proposed by the Lehigh Valley RR. Co., of all agreeing to stop work for a certain length of time. The line and Western trades on some of the roads have assumed such immense proportions that it is thought by some that production can be continuous, and that the tide-water markets will prove of quite secondary importance; influencing but little the price of coal.

It is very difficult to say what the demand during the winter will be; but with a season of average severity, the requirements of 1880 will be enormous. It is found that dealers and others are not nearly so well stocked as it was thought they were.

Great dependence has properly been placed on the iron trade to put the coal trade to rights. In 1872 and 1873, there was certainly a large amount of coal consumed in iron manufacture; but even in 1878 there was more iron manufactured in this country than in any previous year. The effect was not fully felt in the coal trade, owing to the fact that a large proportion of the iron only went through a portion of the process of complete manufacture. A very large amount of old rails and scrap iron was remanufactured, and the consumption of coal necessary to the production of iron from the ore was avoided. This year there will be a much larger production of iron than last year; and 1880 promises a still greater make, while the supply of old rails and scrap iron has been nearly exhausted all over the world. The consequence is, that the fullest consumption of coal will be necessary. A very favorable feature to the producers of anthracite coal is, that the furnaces using it have, through the low Western freights, been enabled to greatly increase the area of their markets, thereby assuring them the fullest employment.

There has been a steady increase in the actual requirements of domestic coal during the past five years, brought about by the growth of the country, and, with prosperity ruling, the consumption will naturally prove greater than ever before. There are, however, other causes which will make the domestic demand very much greater, namely, the lower costs of production and transportation, which have opened up a largely-increased area of markets, which will not be lost, even with a liberal advance in prices.

The outlook, therefore, is very encouraging, and justifies the belief that in 1880 the coal question will be settled by natural laws, the only ones that could do it, just as has been stated in these columns for several years.

The following circulars were issued October 16th, by President Gowen, of the Philadelphia & Reading Coal and Iron Company:

"On and after Monday, October 20th, 1879, and at the

option of the shipper, the freight and tolls upon anthracite coal by canal from Schuylkill Haven to New York Harbor, or to points upon the Hudson River, or to points upon Long Island Sound, exclusive of the charge of towing from New York City, will be 46 per cent of the price at which said coal is sold alongside at the point of delivery, except for pea coal, for which the rate will be 70 per cent, it being provided that, if the coal is sent in private or leased boats, no higher rate of freight will be taken into account than that current on the company's line boats. The present maximum rate of freight and tolls of $1.15 per ton from Schuylkill Haven on anthracite coal consigned via the Schuylkill Canal to points above and on the Delaware River, is continued. The above drawbacks will only be paid upon strict compliance with all details of the rules and regulations pertaining thereto issued by the Secretary of the company."

Another circular says:

"On and after Monday, October 20th, 1879, and until further notice, such drawbacks will be paid upon all anthracite coal shipped from Port Richmond, and consigned to points bey nd the Capes of the Delaware, upon or through the Delaware & Raritan Canal and through the Chesapeake & Delaware Canal, as will reduce the freight and tolls from the mines to 45 per cent of the net price at which the coal is sold, free on board at Port Richmond, for lump and steamer coal; 35 per cent for broken, egg, stove, and chestnut coal, and 65 per cent for pea coal; provided that the minimum rate from the mines to Port Richmond shall not be less than 85 cents on pea coal, and provided that no higher rate of freight than then current in the company's boats shall be deducted from the price at which the coal was sold in New York Harbor to find the free-on-board price at Port Richmond. If consigned to points within the Capes of the Delaware, the regular drawback of 30 cents and the extra drawback of 30 cents per ton now in force will be continued until further notice. The above drawbacks will only be paid upon strict compliance in all details with the rules and regulations pertaining thereto issued by the secretary of the company."

The following circular was issued to-day by the coal agent of the company:

"On and after October 20th, and until further notice, the following will be the prices for coals delivered on board vessels at Port Richmond, Philadelphia, for shipment to points beyond the Capes of the Delaware, subject to our printed conditions:

	Lump and steamboat.	Broken.	Egg.	Stove.	Chestnut.	Pea.
Hard white ash	$3.00	$2.75	$2.75	$2.75	$2.50	$1.75
Free-burning white ash	.....	2.45	2.55	2.75	2.50	1.75
North Franklin white ash	.....	2.50	2.65	2.75	2.50	1.75
Schuylkill red ash	.....	.....	2.85	3.00	2.50	1.75
Shamokin	.....	.....	3.10	3.10	2.50	1.75
Lorberry	.....	3.25	3.25	3.25	2.75	.....
Lykens Valley (Brookside)	.....	4.00	4.00	4.00	3.25	.....

"The company reserves the right to change prices at any time, except on orders entered prior to such change, and orders sent in will not bind the company until accepted."

ELMIRA, N.Y., Oct. 16.—A conference of agents and representatives of coal companies who supply Northern and Western markets, was held here to-day. The session lasted until late in the night. No action was taken, and an adjournment was had until to morrow forenoon to hear from the Delaware & Hudson Canal Company, which was not represented. The object of the conference is to secure an advance in the Western market, to approximate the advances made in New York.

The production of anthracite coal last week was 567,451 tons as compared with 490,887 tons the previous week, and 499,496 tons the corresponding week of 1878. The total output from January 1st to October 11th was 19,808,063 tons as against 12,640,690 tons for the like period of last year, showing an increase this year of 7,167,373 tons.

Our Philadelphia correspondent, under date of October 16th, says:

"There is considerable activity in the line and city trade, and the threatened advances at tide-water keep purchasers stirred up, and bring orders which, although not up to circular rates, are higher than prices obtained a few days ago. An advance of 25c. per ton on white ash, and varying for the red ash and fancy brands from 25c. to 50c. per ton, has been announced to-day by circular of the Reading Coal and Iron Company, to take place on Monday, and it is also expected that an advance in tolls of 5 per cent will also take place next Monday, the 20th inst., on all coal from tide to points beyond the capes, and through and along the Delaware & Raritan Canal. There is danger of the advances being too rapid. It would have been better to have had less of them, and not to have waited until the market was so well supplied. But 'better late than never.' If the production is not overdone this winter, it is probable that the coal-producers will reap next year some benefits which less tinkering and better judgment early this season would have secured this year.

"Vessels continue very scarce, and freights to Boston range from $1.40 to $1.50 and $1.25 to $1.35 to Sound ports."

Bituminous.

This class of fuel being in short supply, is only limited in price by the ability of consumers to substitute the cheaper anthracite coal. The important question with the bituminous producers is that of labor. In the Cumberland region, according to late advices, three companies had granted the miners their demands for an increase of wages, which will result in making an increased cost of 20c. per ton, for mining and putting the coal at tide-water. The other companies are fighting strongly; but it is evident that increased wages are the order of the day, and we should not be surprised to see the whole region at work very shortly, at the advance. The Clearfield mines have asked for an advance of 10c. per ton for mining. The increase in other labor will make the increased cost to the producers fully 20 cents per ton. These demands will be granted. The Pennsylvania Railroad has adva nced tolls on this coal 25 cents per ton, so that the cost of putting it at tide-water will be 45 cents per ton greater than it was. In one district after another, the miners are making demands for increased wages, and so far they have been successful. With the advance in the price of anthracite coal, there will be a demand from the anthracite miners, and, unless the companies grant it promptly, it is unnecessary to say that it will not require a strike of more than a month for these miners to secure their ends. If every thing else "booms," it is certain wages will do the same.

PITTSBURG, Oct. 16, 1879.

COAL.—The drought continues the rivers in a stage unprecedentedly low, which holds the coal trade quiet and motionless in all its departments. All the coal in first hands at Cincinnati and Louisville is exhausted, and the small quantities in the yards of retailers are being sold at capricious prices, which will give way when navigation opens and ample stocks reach them. Prices will then resume steadiness at about the rate of sales hitherto. We do not change quotations at those points until that takes place. At New Orleans, there is no lack of wholesale stocks on hand, which are disposed of at the prices set down below:

PRICES AT PITTSBURG.

Wholesale, on board	4	cts. per bushel,	$1.06 per ton
Retail, delivered	6@7	" "	1.85 "

AT CINCINNATI.

Wholesale, on board	10	cts. per bushel,	$2.65 per ton
Retail, delivered	12	" "	— "

AT LOUISVILLE.

Wholesale, on board	10	cts. per bushel,	$2.65 per ton
Retail, delivered	—	" "	3.43 "

AT NEW ORLEANS.

Wholesale, on board	50	cts. per barrel,	$4.83 per ton
Retail, delivered	65	" "	6.28 "

Bushels are rated among dealers here at 76 lbs.—26½ bushels make a ton of 2000 lbs., nearly.

The barrel that rules the coal measurement in New Orleans contains 2 4-7 bushels of 80 lbs. each, making about 200 lbs. Nine and two thirds of these barrels weigh a ton, within a small fraction.

COKE.—This business moves onward without the slightest disturbance or change. The demand still meets the supply—32,000 tons a week. This large production is all taken up, without a surplus being left, and there is no call for more, so exactly are the wants of consumers provided for. Prices are unchanged—$1.20@$1.30 per ton of 2000 lbs. on board cars at the ovens.—*American Manufacturer.*

New York.

Wholesale Prices of Anthracite Coal Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
Scranton at Hoboken	2 65	2 65	2 65	2 75	2 95	2 75
*Pittston, at Newburg	2 40	2 40	2 40	2 45	2 70	2 55
Lackawanna at Weehawk'n	2 65	2 65	2 65	2 75	2 95	2 90
Kingston at Hoboken	2 60	2 60	2 60	2 75	3 00	2 75
Wilkes-Barre at Pt. Johnson	2 65	2 65	2 65	2 75	3 00	2 75
Plymouth R. A. at P. John.	.....	.....	2 65	2 75	3 10	2 85
LEHIGH COAL.						
†Spring Mt. at Elizabethport	3 50	3 00	2 75	2 75	2 75	2 50
Up. L. & Coun. Ridge, Eliz'pt	3 50	3 00	2 75	2 75	2 75	2 50
Honey Brook at Port John.	3 50	.....	2 90	2 90	3 00	2 75
Cross Creek at Port John.	3 50	3 50	3 00	3 00	3 00	2 75
Lehigh Valley at Amboy	3 50	.....	2 75	2 75	2 75	2 50
Mt. Pleasant at P. Amboy	.....	.....	.....	2 75	2 75	2 50
Hazleton at Perth Amboy	3 60	.....	2 75	2 75	2 75	2 50
SCHUYLKILL COAL.						
At Port Richmond, Philadelphia, for shipment to points beyond capes of the Delaware.						
Hard White Ash	3 00	3 00	2 75	2 75	2 75	2 50
Free-Burning White Ash	.....	.....	2 45	2 55	2 75	2 50
Schuylkill Red Ash	.....	.....	.....	2 85	3 00	2 50
Shamokin	.....	.....	.....	3 10	3 10	2 50
Lorberry	.....	.....	3 25	3 25	3 25	2 75
Lykens Valley (Brookside)	.....	.....	4 00	4 00	4 00	3 25
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....

* Fifty cents per ton additional for delivery in New York. These prices will probably be advanced 20c. per ton in a day or two.

† These prices are given by Whitney & Kemmerer.

‡ On coal delivered f. o. b., at shipping wharf at Williamsburg, the current rate of harbor freight will be allowed from above prices.

Wholesale Prices of Bituminous Coal.

DOMESTIC GAS COALS.

Per ton of 2240 lbs.	At the Shipping Ports.	Alongside at New York.
Westmoreland and Penn	$4.25	.....
At Greenw'ch, Philadelphia	.....	$5.50
At S. Amboy	5.00	5 50
Kanawha at Richmond	4.10	5.40
Murphy Run, West Va., at Baltimore	3.75	5.85
Fairmount, West Va., " "	3 75	5.70
Newburg Orrel, Md. " "	3.75	6.00
Cannelton & Peytona Cannel, West Va.	....	10.00
" Splint " at Richmond.	6.00	7.00
" Gas Coal at Richmond	4.00	5.65

MANUFACTURING AND STEAM COALS.

Cumberland at G'n & Alexandria	2.75@2.90		4.35@4.50
Cumberland, at Baltimore	2.90@3.00		4.35@4.50
Cl'rfi'd 'Eureka" and "Franklin."			
At mines	0.75	....	....
At Baltimore & Phila	3.25	....	4.50

FOREIGN GAS COALS.

	Sterling.	Am. cur'ncy
Newcastle at Newcastle-on Tyne	7s.6d.	$2 50@ $3.50
Liv. House Orrel, at Liv.	25s.	13.00
Ince Hall Cannel "	35s.6d.	18.00
" Gas Cannel "	25s.6d.	10 00@ 10.50
Scotch Gas Cannel, at Glasgow, nominal	25s.	7.50
	Gold.	
Bl'k House, at Cow Bay, N.S.	$1.60	....
Caledonia, at Pt. Caledonia	1.50	$4.25
Glace Bay at Glace Bay	1.50	4.00
Lingan, at Lingan Bay	1.50	....
Intern'l Mines, at Sydney	1.60	....
Pictou, Vale Mines, at Pictou	2.00	4.70

FREIGHTS.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to Oct. 17th, 1879.

Ports.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Alexandria	1.00	.....	.....
Annapolis	70	.....	.....
Apponang	1.20	.....	.....
Baltimore	50@65	.....	.....
Bangor	.....	.....	.....
Bath, Me	.....	.....	1.10
Beverly	1.45	.....	1.10
Boston, Mass	1.35@1.52	.....	1.10
Braintree	.....	.....	1.10
Bridgeport, Conn.	.....	.....	.....
Burlington	87½	.....	.....
Cambridge, Mass.	1.40	.....	1.10
Cambridgeport	1.40	.....	1.10
Camden	.....	.....	.....
Charleston	1.15	.....	.....
Charlestown	1.35@1.33	.....	.....
City Point	.....	.....	1.00
Coosaw, S C	.....	.....	.....
Damariscotta	.....	.....	1.15@1.20
E. Boston	.....	.....	.....
East Cambridge	.....	.....	.....
E. Gr'nwich, R. I.	1.25	.....	.....
Fall River	.....	.....	80
Georgetown	1.00	.....	.....
Hackensack	.....	.....	.....
Hartford	.....	.....	.....
Hingham	.....	.....	1.10*
Keyport	.....	.....	.....
Lambertville	.....	.....	.....
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Marblehead	1.42½	.....	1.10*
Medford	.....	.....	.....
Millville	.....	.....	.....
Milton	.....	.....	.....
Mystic River	.....	.....	85
New Bedford	1.15	.....	1.25
Newburyport	.....	.....	60
New Haven	85@95*	.....	55
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Norfolk, Va	75	.....	.....
Norwich	1.30	.....	.....
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Portland	1.25	.....	.....
Portsmouth, Va.	75	.....	.....
Portsmouth, N.H.	1.45	.....	1.20
Providence	1.20	.....	.....
Provincetown	.....	.....	1.10
Quincy Point	.....	.....	1.15
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Rockport	.....	.....	.....
Roxbury	.....	.....	.....
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Saugus	.....	.....	1.00
Savannah	1.25	.....	.....
Somerset	1.40	.....	.....
Staten Island	86	.....	.....
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Troy	85*	.....	.....
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Washington	90@1.05	.....	.....
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Wilmington, Del.	24	.....	.....
Wilmington, N.C.	.....	.....	.....

* And discharging. † And discharging and towing. ‡ 3c. per bridge extra. § Alongside. ‖ And towing up and down ¶ And towing.

Lake Freights on Coal and Iron Ore.

Representing the latest actual charters up to Oct. 16th, 1879.

From	To	Rate Per ton.	From	To	Rate Per ton.
Ashtabula	Cleveland	$1.15	Cleveland	Milwaukee	$1.00
"	Detroit	50	"	Windsor	45
Blk. River	Detroit	55	Erie	Chicago	1.00
Buffalo	Chicago	75	"	Duluth	*
"	Detroit	25	Escanaba	Cleveland	2.40
"	Milwaukee	75	Fairport	Pt. Huron	50
Cleveland	Detroit	45	Toledo	Portage	1.25
"	Hamilton	1.25			

*$1.12 ½.

FINANCIAL.

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Buy and sell mining stocks on commission on New York Mining Stock Exchange, and offer superior facilities on San Francisco Exchanges through agency of the Bank of California.

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DIVIDENDS.

OFFICE OF GREEN MOUNTAIN GOLD MINING COMPANY, OF CALIFORNIA,
No. 54 BROAD STREET,
NEW YORK, Oct. 11, 1879.
This Company has to-day declared its fourth regular monthly dividend of FIVE CENTS per share, payable on the 25th inst. Transfer-books close on the 20th and re-open on the 28th of October.
(Signed) L. D. CORTRIGHT, Secretary.

OFFICE OF THE LITTLE PITTSBURG CONSOLIDATED MINING COMPANY,
113 AND 115 BROADWAY,
NEW YORK, Oct. 16, 1879.
DIVIDEND NO. 6.
The Board of Directors have this day declared a dividend of $100,000 (one hundred thousand dollars), being FIFTY CENTS per share (par value $100) on the capital stock of the company, out of the net earnings for the month of October, 1879, payable at the office of the company on and after November 7th. Transfer-books will close October 31st and re-open on the 8th of November.
GEO. C. LYMAN, Secretary.
In addition to the above dividend, there will be $100,000 (out of the earnings for the month of October) carried to surplus account. GEO. C. LYMAN, Secretary.

DIVIDENDS.

OFFICE OF THE HOMESTAKE MINING CO, 31 Broad street, New York, Oct. 13, 1879.
DIVIDEND NO. 10.
The regular monthly dividend of THIRTY CENTS per share has been declared for September, payable at the office of the transfer-agents, Wells, Fargo & Co., 65 Broadway, on the 25th inst. Transfer-books close on the 20th inst.
H. B. PARSONS,
Assistant Secretary.

Horn - Silver Mining Co.,
OF FRISCO, UTAH.
Office, 44 Wall Street, New York.
Capital, $10,000,000; 400,000 Shares; Par, $25.
DIRECTORS.
CHARLES G. FRANCKLYN, Pres.; A. BYRAM,
FRANK G. BROWN, Vice-Pres.; M. CULLEN,
ALLEN G. CAMPBELL, Treas.; D. RYAN.
WILLIAM S. HOYT, Sec.;

OFFICE CHEYENNE GOLD MINING COMPANY,
ROOM 38, NO. 61 BROADWAY, N. Y., July 17, 1879.

ANNOUNCEMENT.—The Company originally set aside 50,000 shares for working capital. The proceeds of these shares have been devoted to purchase of property and development with such highly satisfactory results, that the Directors and Stockholders have united in devoting an additional 50,000 shares for working capital, confident that, in thus devoting one half the entire capital stock to development and equipment, they will be amply repaid in the immediate increase in actual value of each share. With the proceeds of the additional 50,000 shares, the Company will have an equipment second to none in this district, famous for permanent and profitable production, and have already one of the largest and best developed groups of mines in the Hills. A constant and large increase in value of this stock is certain. Messrs. R. C. Stone & Co., of 52 Wall street, are appointed the sole agents for the sale of the working capital stock, and offer the first installment of 10,000 shares, at $1.25 per share, books to close on or before July 31st, 1879. The second installment will be offered at $1.50 per share.

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